FIRE ENGINEERING

The Journal of the Fire Protection Profession Since 1877

AUGUST, 1955

OHIO STATE UNIVERSITY
AUG 23 1955

Hammond, Ind., Industrial Plant Fire Proves Largest of Half Century
(Story on Page 684)

A CASE · SHEPPERD · MANN PUBLICATION

Swimming is great... but

are you ready

with the most effective artificial respiration known to science?

EMERSON

EMERSON Resuscitators

"Simplest and Safest"

J. H. EMERSON CO.

[illegible] COTTAGE PARK AVE., CAMBRIDGE [illegible] MASS.

FEDERAL BEACON RAY LIGHT

OUTSTANDING

FIRE DEPARTMENTS

All over the country, the outstanding fire departments are the first ones to see the marvellous advantages of [illegible] safety provided by FEDERAL'S BEACON RAY light. This advantage is so obvious, thousands of departments have followed suit and have equipped their apparatus with the BEACON RAY.

Now, conspicuous absense of the BEACON RAY raises doubts in the public mind as to efficiency and modernity. This terriffic visual warning light is becoming accepted by the public as "the light" for emergency vehicles.

Is your department a "stand out", or a "hold out"?

You are familiar with BEACON RAY and what it can do — don't delay, don't postpone action any longer.

SPECIFY FEDERAL BEACON RAY lights and FEDERAL Q-2 COASTER SIRENS on your apparatus.

Full descriptive literature on sirens and lights will be promptly forwarded on request.

FEDERAL Q-2 COASTER SIREN

FEDERAL SIGN and SIGNAL Corporation

formerly: Federal Enterprises, Inc.

8702 S. State St., Chicago 19, Ill.

FIRE ENGINEERING

A Consolidation of FIRE AND WATER ENGINEERING
THE FIRE ENGINEER, FIRE PROTECTION and FIRE SERVICE

I. HERBERT CASE, General Manager
FRED SHEPPERD, Editor
KARL M. MANN, Advertising Director

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CONTENTS

Vol. 108 August, 1955 No. 8

	Page
With the Editor — By Fred Shepperd	673
Memphis Develops Fog Nozzles for Heavy Duty Fire Fighting — A Special Report to FIRE ENGINEERING	674
Training of Personnel Keeps Apparatus in Top Shape — By Robert Ely	677
Overhaul and Salvage—in Theory and Practice — By Roi B. Woolley	679
Fire Department Betterment Proves Profitable Investment — By Chief George Coolures	683
Six Departments Cooperate in Controlling Big Hammond Fire	684
Fire Wall Aids in Checking Blaze in Large RR Shops — By Chief John D. Klinepeter	686
The Round Table — Training Fire Apparatus Drivers	694
Short Cuts and Gadgets	695
News of the Manufacturers	696
False Alarms	698
The Watch Desk — By Roi B. Woolley	702
Among the Buffs — By Paul C. Ditzel	708
Questions and Answers	710
Persons in the News	713
Obituaries	715
World-Wide Fire News — By Roi B. Woolley	717
What's Burning?	720
With Our Readers	724
Convention Dates	726

MEMBER
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Associated Business Publications

First Communique from Our New Address

GREETINGS and salutations to the great family of FIRE ENGINEERING readers from our new address—305 East 45th St., New York 17, N. Y., U. S. A.

● Through the years, since 1877, we have moved onward and upward — in more ways than one! Upward and northward, it seems, from the very early days in lower Manhattan, at 16 Dey St. and elsewhere; then 34th and 39th Streets, followed by our late 40th St. address, which has been 'home' for the past quarter of a century,—yes, since 1930, in fact! And now we go five blocks farther north and eastward to the very shadow of the United Nations Buildings.

● Ever advancing! — like our concept of world cooperation and peace and prosperity, with its promise of a better life for all, as typified by the U.N.

●FIRE ENGINEERING's recent affiliation with the great Reuben H. Donnelly Corporation, with whom we occupy our new offices, will provide ever-increasing opportunities and facilities for better serving the vitally essential fire service.

● Our united forces are at your service —in the shadow of the U.N. And the latchstring is always out!

The Publishers

FIRE ENGINEERING

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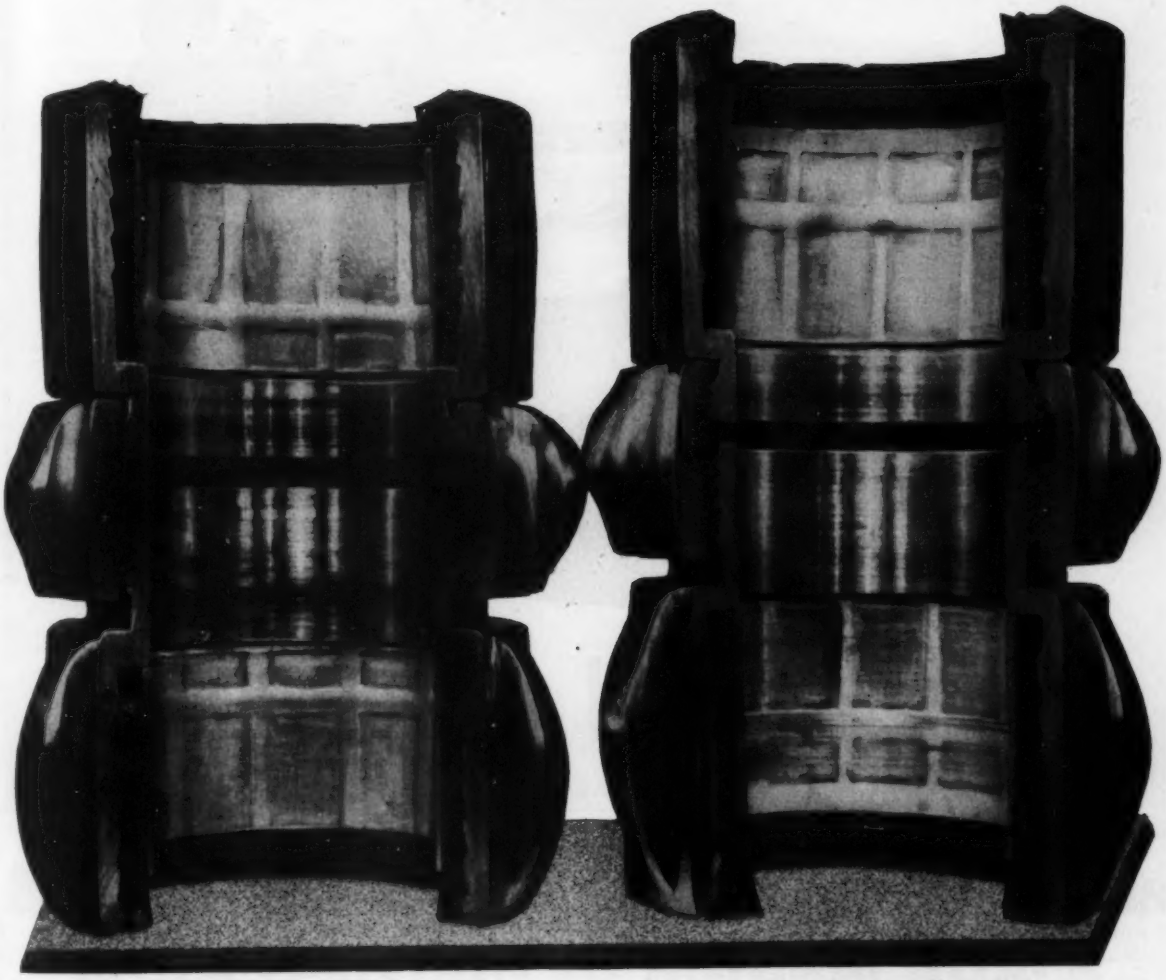
FABRILON

WITH MG COUPLINGS



REGULAR HI-PRESSURE

LIGHTWEIGHT—TAPERED THROAT—HI-YIELD BOWL

HI-PRESSURE RING —— FABRIC 3-LUG PATTERN

FABRIC FIRE HOSE COMPANY

THE ONLY EXCLUSIVE MANUFACTURER OF FIRE HOSE IN AMERICA

SANDY HOOK CONNECTICUT

IN CANADA BICKLE-SEAGRAVE, LTD. WOODSTOCK, ONTARIO

300+ H.P.

Power Packed Performance

There is power to spare in this **new** Seagrave V-12 . . . 300 plus H.P. It is the most dependable engine ever built for fire service and backed by Seagrave's more than twenty years of experience in producing Vee type 12 cylinder engines.

Not a "souped" up model. No raising compression pressure nor increasing engine speed. Increased power is obtained by introducing a maximum of fuel-air mixture into the cylinders by enlarged inlet valves; inlet passages in cylinder head for smoother flow of inlet gases; cam shaft engineered for maximum valve lift and dwell in open position. These features permit the maximum filling of cylinders by deep engine breathing. Large exhaust manifolds and exhaust pipe provide free flow of exhaust gases. There is no exhaust back pressure . . . Carburetors, crankshaft, connecting rod bearings, main bearings, upper piston rings, cylinder sleeves, valve springs, washers, keepers, oil pump, fly wheel, radiator fan . . . all are new and help provide the abundance of power.

For trouble-free service, durability, perfect performance, greater power, there is no other engine that can equal the new Seagrave 906 V-12 for fire service.

THE SEAGRAVE CORPORATION—Columbus, Ohio
Bickle-Seagrave Ltd—Woodstock, Ont.

Seagrave V-12

the Greatest Name in Fire Apparatus

RESEARCH KEEPS **B.F.Goodrich** FIRST IN RUBBER

New treatment makes hose 10 times more resistant to mildew attack

MILDEW is a hose killer. It thrives on water soaked fire hose jackets, causes weak spots that burst under pressure.

Now B. F. Goodrich engineers, who were first to make fire hose light and flexible, have come up with a new chemical treatment — called Superseal — that gives maximum protection against mildew, rotting, moisture absorption and freezing.

The new treatment is not just a surface application. The chemical solution penetrates and protects every cord in both the inner and outer jackets, prepares the hose for all sorts of weather. And, unlike ordinary treatments, the B. F. Goodrich process actually *increases* the adhesion between jacket and tube. What's more you get added safety because the chemical makes B. F. Goodrich hose more flame-resistant.

Tests show that hose treated by this new B. F. Goodrich method has 10 times better mildew resistance than other treated hose. To prove this, three lengths of hose were buried in a plot of ground that has been infested with mildew spores, maggots and microbes. After 8 weeks, the untreated hose was reduced to powder. The hose treated the old way wasn't much better. But the B. F Goodrich treated hose looked good as new, still had 96% of its original strength.

There's a B. F. Goodrich fire hose distributor near you, ready to bring this and other B. F. Goodrich hose improvements to your department. Give him a call or write *The B. F. Goodrich Company, Dept. M-473, Akron 18, Ohio.*

B.F. Goodrich
INDUSTRIAL PRODUCTS DIVISION

G.E. DEVELOPS NEW PLUG-IN CHASSIS FOR 2-WAY RADIO

NEW PROGRESS LINE saves money on maintenance through faster servicing—protects from obsolescence because chassis are quickly interchangeable.

IN the new Progress Line, transmitter, receiver, power supply and optional chassis are individually rack-mounted in a triple-rigid mobile case. Rapid interchangeability is provided by this rack construction and true plug-in chassis. This plug-in design permits changes in frequency, power, type of reception (narrow or wide band) quickly *at minimum cost, at any time.* You're free of any obsolescence risk!

You may switch Progress Line mobile units—whether front or trunk mount, between vehicles with 6 or 12 volt DC systems. No electrical alterations are needed. And any mobile combination can be converted quickly to a low-cost, 117 volt AC intermittent duty base station by changing only the power supply chassis!

Let a G-E Communications Counselor analyze your radio needs and develop an installation or conversion program planned for long-run savings. Write or call today for full specifications on the new PROGRESS LINE. *General Electric Company, Communication Equipment, Section X5985, Electronics Park, Syracuse, N. Y.*

INDIVIDUAL PLUG-IN CHASSIS minimize capital investment in spares and reduce radio maintenance time! Your vehicles will be back "in service" faster. For instance, you can replace either a transmitter or receiver plug-in chassis right in the vehicle in 5 minutes—using only a screwdriver. Individual plug-in chassis of the new General Electric Progress Line units also provide complete interchangeability between mobile and station transmitters and receivers.

◀ There is a G-E Authorized Service Station near you. Look for this sign.

EASY FRONT MOUNTING under the dash. The new G-E Progress Line case is less than 15" deep. For the first time you can have a 90-watt front mount mobile unit in the 25-54 MC band and a 50-watt front mount mobile unit in the 144-174 MC band. In the 25-54 MC band you can now have simultaneous monitoring of 2 channels, in the same case, without additional equipment.

Progress Is Our Most Important Product

GENERAL ELECTRIC

first need for efficient fire fighting... M·S·A CHEMOX breathing protection

Because effective fire fighting calls for close range operations, M·S·A Chemox breathing protection is essential for every department.

The M·S·A Chemox is on and operating in seconds . . . the instant the wearer starts to breathe, pure oxygen is released from the replaceable chemical canister. This means the Chemox-equipped firemen can work surrounded by unbreathable or oxygen deficient atmospheres with complete breathing safety . . . the fighting team can get to the seat of the fire in the fastest possible time . . . operate at 100% efficiency in quick attacks at the seat of the fire, or rescue work.

The M·S·A Chemox is light—only 13½ pounds. Its balanced design gives maximum comfort, freedom of movement. The economical replaceable chemical canisters can be stored indefinitely—always ready. And because the Chemox does not depend on high pressure cylinder valves and fittings which may leak, and because no extra equipment is needed for recharging, you have a fire-fighting device that gives you positive, effective service. Write or call for complete details. Your request will be handled promptly.

MSA
SAFETY EQUIPMENT HEADQUARTERS

Call the M·S·A man on your every safety problem . . . his job is to help you

MINE SAFETY APPLIANCES COMPANY
201 North Braddock Avenue, Pittsburgh 8, Pa.
At Your Service: 76 Branch Offices in the United States
MINE SAFETY APPLIANCES CO. OF CANADA, LTD.
Toronto, Montreal, Calgary, Edmonton, Winnipeg, Vancouver, Sydney, N.S.
Representatives in Principal Cities in Mexico, Central and South America
Cable Address: "MINSAF" Pittsburgh

ELECTRIC POWER

DELCO-REMY A.C. GENERATORS FOR EXTRA-HEAVY ELECTRICAL LOADS

Delco-Remy's new 6- and 12-volt A.C.-D.C. charging systems are the answer to the *extra-heavy* electrical demands of late-model fire engines, and other vehicles equipped with two-way radio, floodlights, or other special electrical units. High wattage output is ample for heaviest electrical loads . . . generators pick up discharged batteries quickly in emergencies. Delco-Remy A.C.-D.C. charging systems are unexcelled at curb-idle . . . furnish up to 180 amperes at higher engine speeds . . . are dependable under the most rugged operating conditions at all engine speeds.

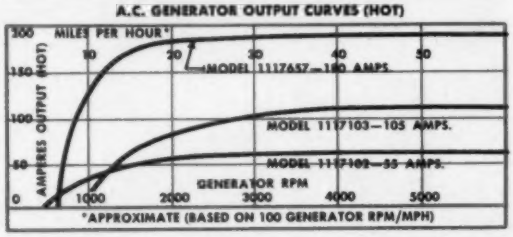
Application packages for both 6- and 12-volt generators, complete with installation instruction sheets for popular makes of cars and trucks, are available. Conversion is simple. Specify Delco-Remy A.C.-D.C. systems on your new apparatus. See your nearest United Motors Distributor for generator applications on existing vehicles.

A.C. GENERATOR PERFORMANCE DATA (HOT)

Model	Volts	Cut-In RPM	Engine Idle Amperes*	Maximum Amperes	Power Watts SAE	Recommended For
1117102	12	525	39	55	825	All speeds.
1117103	12	960	5	105	1575	All speeds.
1117657	12	550	130	180	2700	All speeds.
1117062-3-4	6	750	38	90	720	All speeds.

*APPROXIMATE (BASED ON 1000 GENERATOR RPM)

A.C. GENERATOR OUTPUT CURVES (HOT)



*APPROXIMATE (BASED ON 100 GENERATOR RPM/MPH)

DELCO-REMY D.C. GENERATORS FOR MEDIUM-TO-HEAVY ELECTRICAL LOADS

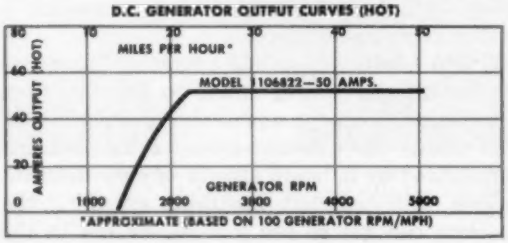
Delco-Remy's 12-volt extra-output D.C. generator is an economical answer to the electrical needs of late-model fire engines . . . other vehicles with additional lights, two-way radios, or other special electrical equipment in medium- to heavy-duty service in suburban areas. Delco-Remy extra-output D.C. generators are low in cost, simple to install, economical to maintain. Performance data on a typical Delco-Remy 12-volt D.C. generator are shown at the right. Specify Delco-Remy extra-output generators on your new apparatus. For further details and generator application data on existing vehicles, see your nearest United Motors Distributor.

D.C. GENERATOR PERFORMANCE DATA (HOT)

Model	Volts	Cut-In RPM	Curb Idle Amperes*	Maximum Amperes	Power Watts SAE	Recommended For
1106822	12	1300	0	50	750	Low to Medium Speeds

*APPROXIMATE (BASED ON 1000 GENERATOR RPM)

D.C. GENERATOR OUTPUT CURVES (HOT)



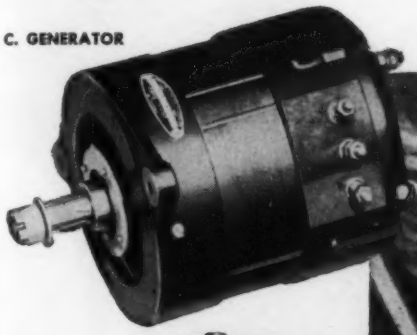
*APPROXIMATE (BASED ON 100 GENERATOR RPM/MPH)

Delco-Remy
ELECTRICAL SYSTEMS

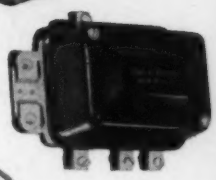
DELCO-REMY • DIVISION OF GENERAL MOTORS • ANDERSON, INDIANA

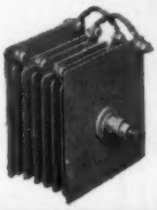
right for the job

A. C. GENERATOR



REGULATOR





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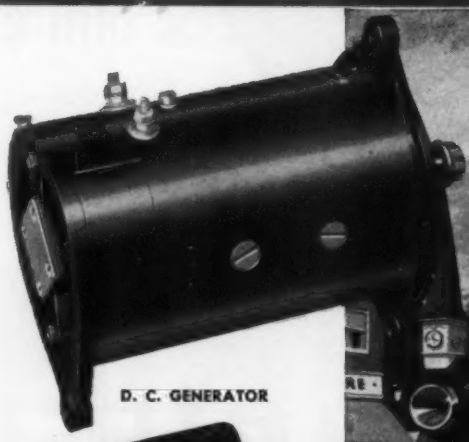
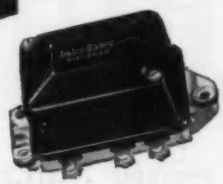


D. C. GENERATOR



REGULATOR

A GENERAL MOTORS PRODUCT GM GENERAL MOTORS UNITED SERVICE MOTORS A UNITED MOTORS LINE

DISTRIBUTED BY WHOLESALERS EVERYWHERE

Get your message over TRIGGER-FAST!

Fast, clear commands bring fires under control quicker—with less property damage and danger to firemen. *Press the trigger—and Audio Hailer amplifies your voice 1000 times.* It gets your orders across—above the roar of engines, pumps and flames. Ask your supply dealer for a demonstration. Or write for brochure.

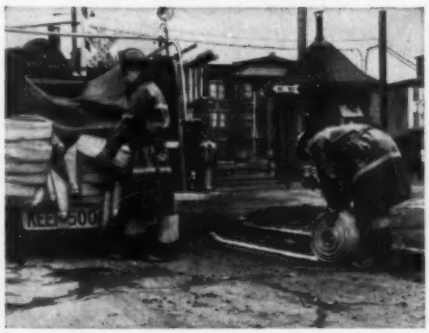
AUDIO **Hailer**

AMPLIFIES YOUR VOICE 1000 TIMES · PORTABLE · SELF-CONTAINED
LIGHT-WEIGHT · BATTERY OPERATED · WEATHER-PROOF

AUDIO EQUIPMENT CO., INC., 805 Middle Neck Road, Great Neck, N. Y.

Niagara Falls Fire Dept. reports:

Lightweight hose made with "Dacron" Reg. U. S. Pat. Off. gets into action fast . . . speeds coiling and racking



Hose made with "Dacron" racks more compactly than conventional hose . . . is easier to coil. "Dacron" strengthens hose and is virtually unaffected by mildew.

Engine Company No. 1, Niagara Falls, uses 6500 feet of hose made with "Dacron"*—and the department reports this flexible hose helps them maintain top efficiency. Hose made with "Dacron" polyester fiber is lightweight . . . easy to handle and carry. This helps the company to get into action fast —makes coiling and racking a quicker, easier job, too.

Fire departments across the country are reporting increased all-around performance from hose made with "Dacron". Used as the load-carrying filling cord that reinforces the hose, this man-made fiber permits a hose that's light and flexible—yet stronger than ordinary hose of the same diameter.

Two years of field testing under all conditions have conclusively proved the superiority of hose made with "Dacron". Du Pont makes only the "Dacron" fiber . . . not the hose. Fire hose made with "Dacron" is produced by all leading fire-hose manufacturers. Ask *your* supplier about it the next time you need hose. E. I. du Pont de Nemours & Co. (Inc.), Textile Fibers Dept., Wilmington 98, Delaware.

*REGISTERED TRADE-MARK FOR DU PONT'S POLYESTER FIBER

ADVANTAGES OF FIRE HOSE MADE WITH "DACRON":

- Lighter
- Stronger
- More flexible
- Cuts loading time
- Saves space

DACRON®

POLYESTER FIBER

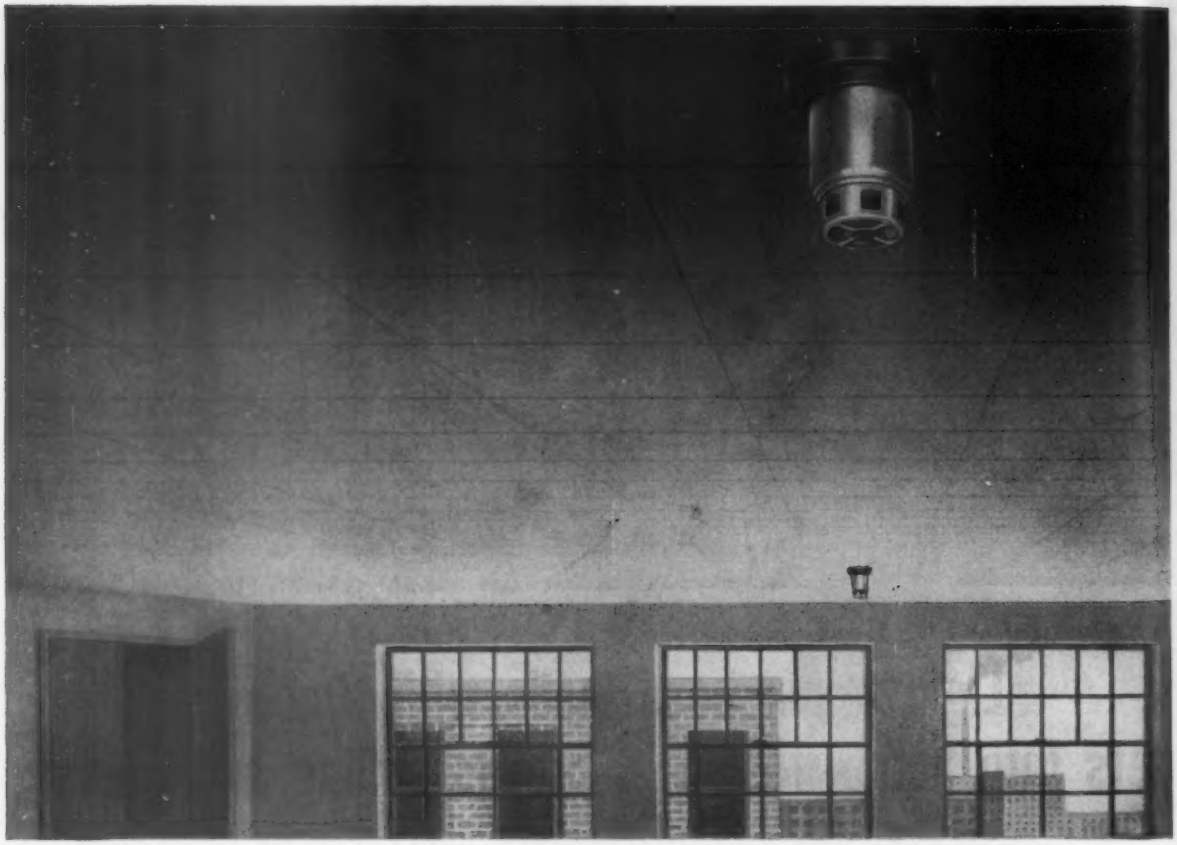
DU PONT

REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

New, radio-active, automatic fire guard!

C-O-TWO PRE-DETECTOR SYSTEM



Each pre-detector head protects up to 3,600 square feet of area... harmless radio-active element utilizing ionization chamber principle quickly detects all forms of fire... requires only simple two-wire circuit and insignificant wall space for controls.

This completely new and positive means of spotting fire is just what you've always needed and wanted . . . detects in the earliest stage, invisible combustion gases, visible smoke, slow smoldering, as well as open flame. The C-O-TWO Pre-Detector System is simple to install, extremely economical to maintain and doesn't depend on thick smoke or heat for actuation.

As many pre-detector heads as necessary can be connected together in a single circuit and up to 16 separate circuits or spaces handled by one system. With a single circuit the pre-detector heads are connected directly to the fire indicating cabinet, while with multiple circuits the pre-detector heads are first connected to one or more space indicating cabinets capable of visually showing by number the exact location of the fire. Relays perform such functions as sounding alarms, closing fire doors, shutting down ventilation and releasing fire extinguishing systems.

The C-O-TWO Pre-Detector System has been subjected to extensive testing and carries Underwriters' Laboratories, Inc. listing, as well as Factory Mutual Laboratories approval. Proven pilot installations have been made in such diversified properties as a television station, an electric power company network analyzer room, a railroad signal tower, an airline flight training equipment room and the offices of an insurance company.

Don't take unnecessary chances any longer... the extensive fire protection experience of PYRENE—C-O-TWO over the years is at your disposal without obligation. Get complete facts about this new C-O-TWO Pre-Detector System today!

Pyrene

PYRENE — C-O-TWO

NEWARK 1 • NEW JERSEY

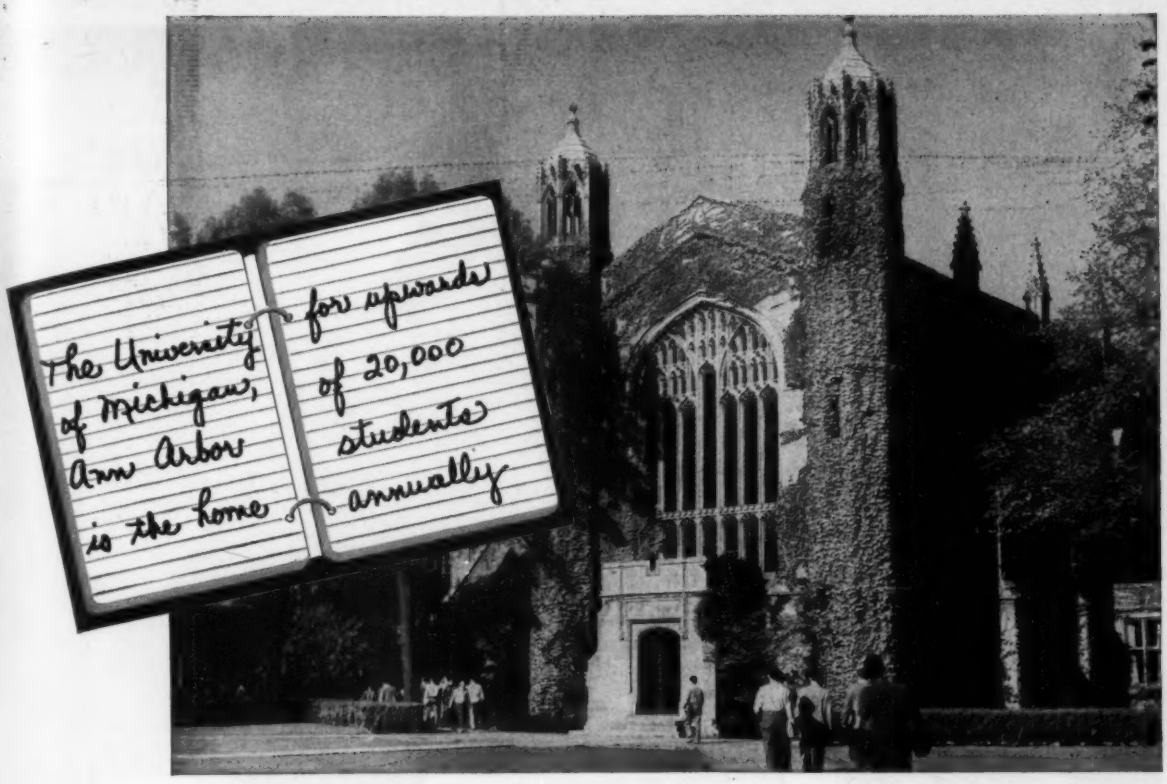
Sales and Service in the Principal Cities of United States and Canada

C-O-TWO

COMPLETE FIRE PROTECTION

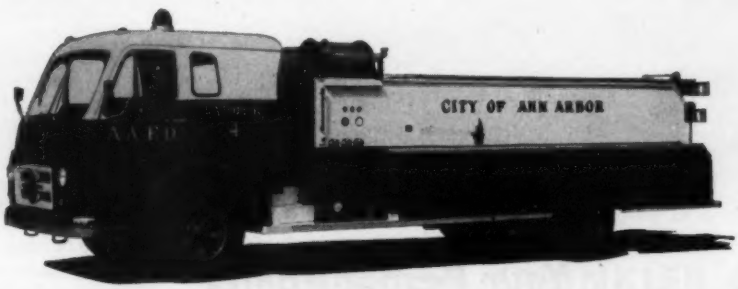
portable fire extinguishers . . . built-in fire detecting and fire extinguishing systems

CARBON DIOXIDE • DRY CHEMICAL • VAPORIZING LIQUID • SODA-ACID • WATER • CHEMICAL FOAM • AIR FOAM



a progressive city protects a great university

with **JOHN-BEAN** *HIGH-PRESSURE FOG FIRE-FIGHTERS*



Today one of the five largest universities in the nation, Michigan, is distinguished for the excellence of both its faculty and its physical facilities. The 700 acre campus with approximately 90 major buildings make Ann Arbor a "university town".

Situated on the perimeter of one of the world's great industrial centers, more than 50 firms comprise the industrial family in Ann Arbor. Recognizing the ever increasing need for better fire-fighting protection, this progressive city has selected the finest — another John BEAN High-Pressure Fog Fire Truck.

When every second counts most, the John BEAN High-Pressure Fog System makes fast acting, easily controlled fog streams instantly available for triple fire-killing action.

1. It cools. 2. It isolates. 3. It smothers.

The John Bean Engineered Ladder Truck shown above is the third John Bean Fire Truck in use protecting this city.

It is designed as a multiple purpose, hard hitting combination unit featuring — high-pressure fog, 186' of ladders, rescue equipment, two-way radio and salvage appliances.

You, too, can give your community the best fire-fighting protection. Get complete details. Write for catalog today.

JOHN fmc® BEAN

ORIGINAL HIGH-PRESSURE FOG FIRE-FIGHTER

John Bean Division, Lansing 4, Michigan
John Bean Division, San Jose, California

Can be mounted on most standard truck chassis.

A PRODUCT OF FOOD MACHINERY AND CHEMICAL CORPORATION

THE GREATEST SHOWING OF INDUSTRIAL RUBBER PRODUCTS ON EARTH!
REPUBLIC
FIRE HOSE
The jackets of Republic Fire Hose, made only of selected yarns, are plain, Provar Processed (mildew and vermin resistant) and waxed, or in any combination. Tubes have long-aging qualities. Five municipal grades, 3 industrial grades (also made with rubber or neoprene covers) and lightweight hose for forestry service are available.

Your Responsibility

. . . is to secure the fire hose that will do the best job of protecting your community.

Our Responsibility

. . . is to provide you with that "right" hose, as we have done for cities all over America for the past 52 years.

One of the 5 grades of Republic Municipal Hose is the "right" hose for you. Your local Republic Distributor can show you which is best for you . . . and can tell you the advantages of plain, waxed or Provar Processed (Republic's exclusive mildew-proofing treatment) Hose. Call him today or write directly to us.

"Quality Hose Builders for More Than 50 Years"

REPUBLIC RUBBER DIVISION

LEE RUBBER & TIRE CORPORATION, YOUNGSTOWN 1, OHIO

INDUSTRIAL RUBBER PRODUCTS

ROCKWOOD ALL-PURPOSE FOAM can be used to blanket fires in alcohols, ethers, esters, ketones, as well as petroleum products.

Now... one FOAM extinguishes both petroleum and alcohol fires

New Rockwood All-Purpose FOAM does the work of two products. Simplifies training of fire fighting personnel and cuts down fire protection inventory. Rockwood All-Purpose FOAM quickly puts out fires in alcohols, ketones, ethers and similar water soluble materials as well as petroleum derivatives.

Rockwood All-Purpose FOAM reduces fire protection equipment for fire departments and plants which must deal with more than one type of fire hazard, and is ideally suited for Rockwood's SpotPROTECTION or fixed piping systems.

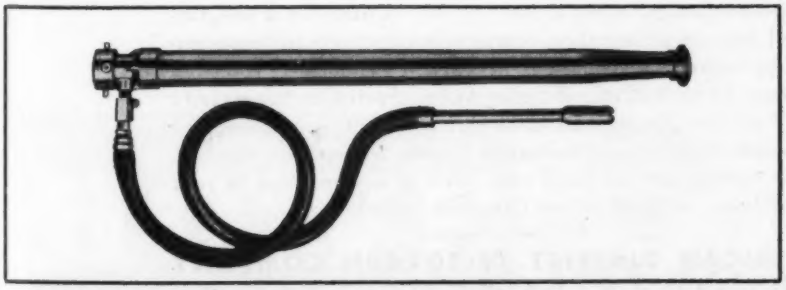
Rockwood All-Purpose FOAM is well suited for use by municipal fire departments, oil refineries, distilleries, chemical and other industrial plants.

Rockwood All-Purpose FOAM liquid with standard Rockwood FOAM nozzle provides the simplest, fastest means for extinguishing alcohol, solvent fires. The FOAM nozzle attaches to a hose connected to the discharge gate of a fire truck, hydrant or interior hose station.

Specify new Rockwood All-Purpose FOAM, put this versatile fire fighter to work for you.

ROCKWOOD SPRINKLER COMPANY

Engineers Water . . . to Cut Fire Losses



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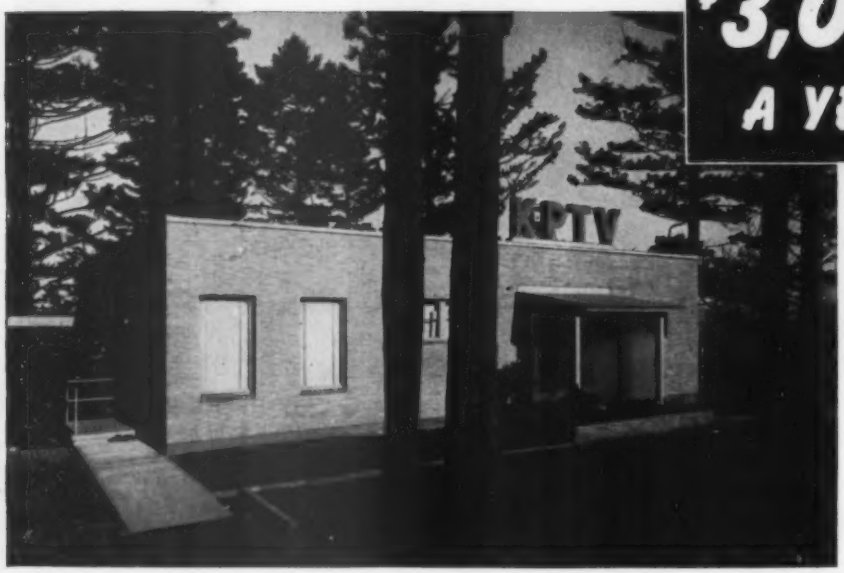

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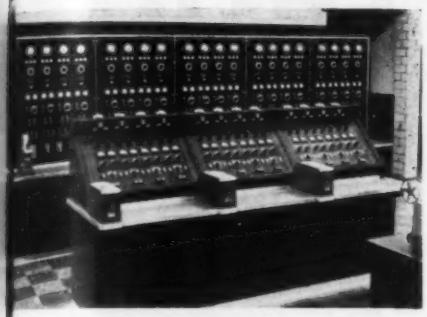

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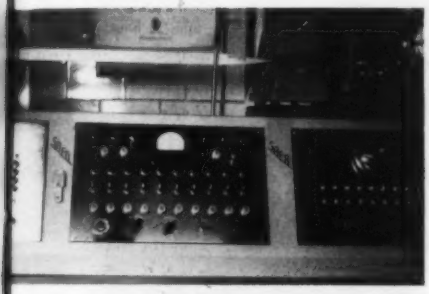

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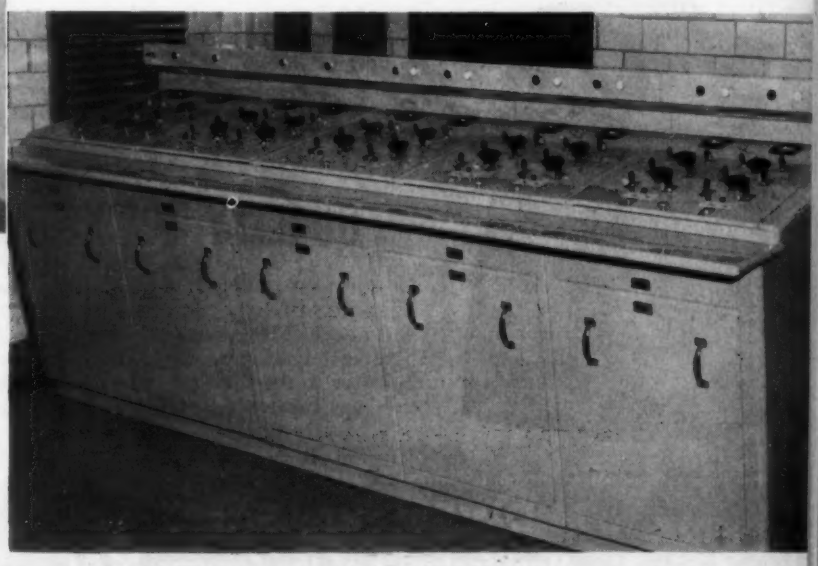

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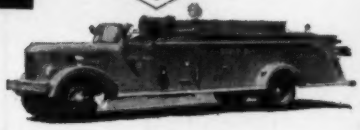

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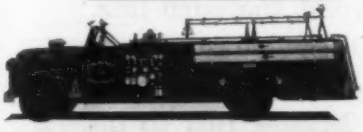

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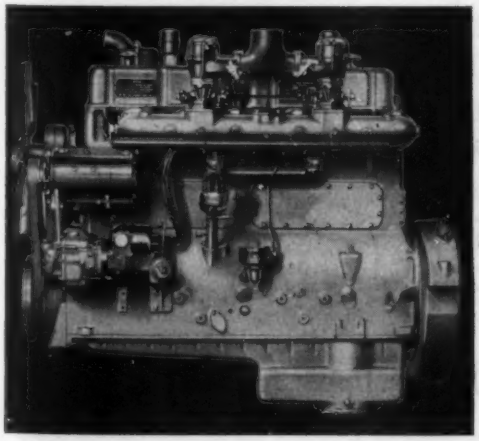

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AUGUST, 1955

FIRE ENGINEERING

VOL. 108, NO. 8

With the Editor

Monday Morning Quarterbacks Last month we drew some comparisons between the municipal fire service and business and industry, the essence of our message being that now that fire fighting is big business it is time we applied some of the principles of scientific management and business efficiency to our job of fire suppression and fire department administration.

Some readers have agreed with us in theory, but would like to have a bit more practical approach to the problem. "Give us something we can get our teeth into," is the way one chief expressed himself.

That's a fair question, but one that can hardly be answered in degree within the limitations of this editorial page, even if we had all the answers which, of course, we haven't. However, we can advance one constructive thought based upon practical application by a number of representative fire departments.

That is, to apply the principles of management and direction by *conference, committee* and *critique*.

As FIRE ENGINEERING has repeatedly pointed out, the progressive fire department fights fires three ways today: *Before they start; when they occur; and after they have been extinguished.*

Obviously, the first step is pre-determined attack strategy based on inspections and other collected information of occupancy, exposure, and so on. The second step is the battle proper. The third, and perhaps least understood and least adopted way, is the *post mortem* or *critique*. Only by this sort of procedure can a fire department truly profit by its own mistakes and continue to improve its methods and techniques.

No fire department is too big or too little to apply these simple principles of management, administration and direction. It is being done in business and industry by large and small concerns. And it works.

Please understand that we are not referring to the non-scheduled and spasmodic "conferences" of brass hats, called by the chief or commissioner to air a certain subject (all-too-often of political implications and complications). We have in mind the regularly scheduled periodical sessions of top-ranking heads of divisions and other responsible policy and plan makers which are all business from opening to closing gavel, such as are conducted in Portland, Ore., where the staff meets with the heads of each platoon once a week; or Los Angeles, Detroit, Madison, Wis., or any one of a score of other fire departments.

We have in mind, too, New York City, which has at long last adopted a form of the conference-committee-critique principles under the direction of Fire Commissione Edward F. Cavanagh, Jr.

New York has always practiced the first of the two stages mentioned above, but heretofore has limited the post-fire discussions to company "hot stove sessions" or to random group gatherings at headquarters. In other words, while among some of the top brass and company officials there have been informal "autopsies," no comprehensive, concerted effort has heretofore been made at the fire department level to subject working fires—and other serious emergencies—to the cold, critical scrutiny that carries beyond the normal perfunctory company and battalion reports.

Marking another of the innovations that is winning for the world's largest fire department more favorable acclaim and publicity, Fire Commissioner Cavanagh has set up a new departmental unit known as the *Fire Survey Unit*. In his own words this is to be a sort of "Monday morning quarterback."

Its objectives will be to study techniques employed at major fires and emergencies; to make analyses, and to come up with conclusions that will enable the department "to profit by mistakes, if any, and to learn from experience."

The Fire Survey Unit will include, besides the Commissioner himself or his representative, the assistant chief of department in charge of the bureau of personnel and administration; the senior chief in charge of the fire, or other emergency under consideration; the chief of communications; and the chief of the fire prevention bureau.

This group, supplemented by other officialdom that might be called in by the Commissioner, will not confine itself alone to studies of fires that have become history. It may be concerned with emergencies of entirely different sort and scope. But primarily it will review the major factors incident to every serious operation with which the fire department is concerned. In this connection it is entirely possible that it will discuss administration and policy making.

It is perhaps too early to report the accomplishments of this move by a fire organization that has (always) in the past believed it was too big for application of this kind of business method. As we see it, this is a move in the right direction.

Fred Merrell

Memphis Develops Fog Nozzles For Heavy Duty Fire Fighting

Master Stream Device and Special Applicators Receive Baptisms in Actual Fire Duty

A SPECIAL REPORT TO
FIRE ENGINEERING

Editor's Note: In its April, 1954, issue, FIRE ENGINEERING pictured several demonstrations of the use of large scale water fog undertaken by the Memphis, Tenn., Fire Department during the Fire Department Instructor's Conference held in that city. In the June number of that year, this Journal published a detailed account of the application of large scale fog on a three-alarm fire under the title "Memphis Effectively Uses Heavy Duty Fog Streams."

This article, by Richard M. Adelman, a member of the Memphis Fire Department, attracted considerable attention and since that time the extinguishing methods of this progressive fire department have been described in a number of publications.

In March of this year, FIRE ENGINEERING touched upon some further developments in the field of water fog appliances which were created by the Memphis Fire Department and shown in dramatic fire control demonstration during the February Fire Department Instructor's Conference. Their purpose and application to the science of fire control and extinguishment were graphically explained by Chief John Klinck in his account of the Esso Standard Oil Barge fire which was described in detail in the January, 1955 number of this publication.

Many of our readers have since that time asked us to elaborate on the master stream devices created and built by this department under the direction of Chief Klinck and Fire Commissioner Claude Armour.

This we are pleased to do. With the cooperation of Chief Klinck and his staff, we bring you this interesting account of the developments leading up to the creation of the department's latest brain children, the "Stream Master" and cellarpipe, and a description of these and related facilities, all of which are products of this enterprising fire force.

The editors are indebted to Chief Klinck and Commissioner Armour for permission to use this material, and to Fireman Richard M. Adelman, Training Division, who helped materially to prepare this report.

THE Memphis Fire Department has long been a believer in water fog as an efficient, practical extinguishing agent. Memphis was among the first municipal fire departments to equip its forces with fog nozzles. It has readily accepted and experimented with such various improved nozzles, introduced by manufacturers. And through this experimentation, most of it on the fire ground, it has steadily increased its lore of water fog, fog application—and its limitations.

In the early days, the studies were of necessity concerned with small capacity fog patterns and streams and with the appliances for applying such patterns, particularly the latter. Excellent as were most of the nozzles adopted by the department, there were fires which demonstrated the need for modifications, or elaborations of the then prevailing equipment in order to make it more effective as an extinguishing force. In the main, these were instances which called for greater discharge and volume of water, using certain patterns of fog, in such manner as to get more water *on the fire* than was then attainable.

In brief, although considerable effort and ingenuity had been devoted by manufacturers to developing nozzles that would deliver excellent fog patterns and streams, not so much consideration had been given to the methods of employing those nozzles to attain maximum effectiveness. This was particularly true in the field of devices to operate at over 500 G.P.M.

This situation stimulated the thinking and spurred action by Chief Klinck and his staff. Efforts to secure greater volume and longer reach of fog patterns, without sacrificing manpower or adding time and labor to fire control operations, convinced the chief first that there were no facilities such as he had in mind, presently on the market, and, secondly, that if he wanted them he would have to develop them himself, or at least he would have to create the appurtenances for applying water fog in large volume, utilizing the existing nozzles in use by the department.

In the fire service as in industry and business generally, improvements in products and in operations come about because somebody has not been satisfied with things as they were, or are. And so it was in this case. Chief Klinck and his men were not satisfied that the full possibilities in the field of large-scale water fog had been explored and their limitations reached.

All this is prefatory to the account, which follows. Today it is gratifying to recount that leading manufacturers of water fog equipment are continuing to explore this field, and are introducing nozzles and hose stream appliances—holders, applicators, etc.—for which the fire service is eagerly waiting. FIRE ENGINEERING has touched upon some of these developments, and the use of unattended large-scale streams in fighting serious fires. Unquestionably the tests recently completed by the Committee on Fire Department Equipment at the University of Maryland will stimulate further research into the field of heavy-duty fog, and the development of specialized tools and appliances for its application. Meanwhile it would appear that the Memphis Fire Department has set a fast pace for the fire service to follow.

During World War II and immediately thereafter as is generally known, water fog fire fighting equipment was made available to municipal fire depart-

Photo courtesy Memphis Fire Department

This device will operate with fog nozzles delivering up to 1,000 g.p.m. straight stream or fog, and can be operated without attendants. One of the heavy-duty stream appliances developed by the Memphis Fire Department.

ments by a number of manufacturers, some of whom had successfully produced fog nozzles and applicators having limited discharge characteristics for the Navy and Air Forces.

As we have said, among the first of the large municipal fire departments to adopt the principles of fire control and extinguishment by means of water fog, and to equip its fire forces with such devices, was the Memphis Fire Department. In some measure the use of water fog met with "amazing success" to quote the department. However, the fog equipment at that time was limited to only the 2½-inch or smaller hose.

This meant that the fog equipment could only be used on fires where hand line fire fighting was feasible. In larger operations, where the heavier "master streams" were needed, the fire department was of necessity forced to fall back on solid stream equipment.

In 1951, a major fire occurred in Memphis which forcibly demonstrated the need for some piece of apparatus capable of discharging a master fog stream. Shortly thereafter, an old salvage corps truck of the department was rebuilt in the department shops; this incorporated a deck gun fitted with a fog nozzle capable of discharging a heavy fog stream (JN-200).

Not long after this unit was placed in service a fire occurred in the Carter-Fruehauf Trailer Company plant on Kansas Street. The fire was of major proportions and when the fire department arrived on the scene, a large part of the plant was involved in the fire. The one- and two-story brick and corrugated iron structure measured about 300 by 80 feet in area. A delayed alarm permitted the fire to gain considerable headway.

The rebuilt Memphis salvage truck responded to this fire and after hose lines were connected to it, the unit was driven into the building and the heavy fog stream supplied by a JN-200 nozzle mounted on a deck gun was operated on the blaze.

In a matter of minutes the fire was completely under control and the fog stream shut down. This experience provided conclusive proof of the effectiveness of this type of equipment. As a result, a short time later another salvage corps unit was equipped with a similar deck gun and large fog nozzle.

Both of these units continued to give excellent service, time and again proving their value to the department. Nevertheless they were, in a sense, makeshift appliances. Neither piece of apparatus had been designed and built for the particular task they were attempting to do. For this reason, fullest possible advantage could not be taken of the large capacity fog nozzles.

Memphis Has First "Custom Built" Fog Fire Fighter

In 1953 it was decided to replace at least one of the salvage corps units. The equipment had been in use a number of years and had seen some hard service. Under the direction of Chief John Klinck a combined salvage-deluge truck was designed and constructed in the fire department shops.

This apparatus carries a large number of salvage tools and equipment. In addition, it mounts a deck gun capable of discharging 1,500 gallons per minute. This gun is fed by a manifold from the rear of the truck, where six 2½-inch inlets are located.

Three pre-connected 100-foot hose lines are carried on the apparatus, thus allowing the vehicle to move from one point to another during the fire fighting operations without shutting down the lines.

Additional Mobile Fog Units

In 1954, an identical unit was built and placed in service by the Memphis Fire Department. Chief Klinck's primary thought behind locating these large fog guns on the salvage trucks was to have one on hand at every first alarm fire.

During the summer, another of the older salvage corps units was taken out of service and rebuilt in the department shops. This vehicle was equipped with a deck gun, JN-200 nozzle, and a four-inlet manifold at the rear of the unit. The big gun is capable of discharging 1,000 gallons per minute.

Late that year, Chief Klinck designed an additional fog unit designated a deck wagon. This apparatus, also produced in the department shops, in effect, is a self-contained, mobile heavy-duty fog gun. The apparatus is built on a GMC chassis, which was removed from an old salvage truck. The chassis and all mechanical parts were completely overhauled and repair shop personnel, under the direction of Chief Klinck, built the body for the unit as well as all component parts with the exception of the deck-gun and shut-off valves, which were purchased.

The construction of this unit incorporates a header, supplied by a maximum of six 3-inch hose lines. The header is in turn connected to a 6-inch feed pipe which supplies water to the deck gun. This gun is equipped with an Elkhart JN-200 fog nozzle and is capable of discharging a 2,000-G.P.M. stream. If the need arises, the fog nozzle can be removed from the gun, and solid stream tips up to 2¼-inch in diameter substituted.

In addition, the truck also carries a complete assortment of the various specially designed and constructed fog applicators which have been under study by the Memphis Fire Department and are described later on in this report.

While the beforementioned deck wag-

Photo courtesy Memphis Fire Department

Two of the heavy duty applicators developed by the Memphis Fire Department. Upper view shows 10-foot 2½-inch applicator with single JN-200 fog nozzle. Lower shows the 18-foot 2½-inch applicator with dual 2½-inch fog nozzles.

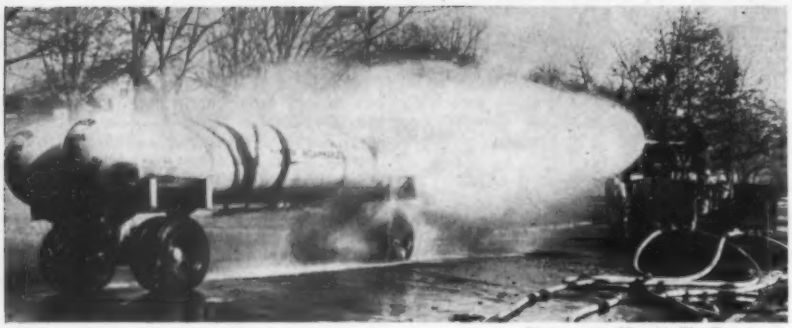


Photo courtesy Memphis Fire Department

The Memphis Fire Department has converted several of its old salvage trucks to battery or deluge fog wagons, such as this one shown cooling down an LPG transport. Up to six hose lines can be converted into powerful fire-killing fog or straight streams through mounted turrets. Note rear manifolds.

Photo courtesy Memphis Fire Department

A new twist in cellar pipes developed by the Memphis Fire Department. Few cellar fires can withstand this cloudburst of fog, produced by dual JN-200 fog nozzles on special mounting that is operated through floor openings.

ons now in service in the department have proven themselves in every respect, Chief Klinck believed that there was still need of an appliance that would fit into fire fighting procedures somewhere between the hand line operation and the use of the deck wagon.

This belief was confirmed by a fire that occurred in the summer of 1954. Shortly thereafter, a somewhat unusual piece of equipment, later dubbed the "Memphis Stream Master" came into being in the department. The stream master is basically a portable deck gun. It receives its water supply from two 2½-inch lines siamesed into the rear of the appliance. The water travels through a curved steel pipe, into a short section of 2½-inch hose, to which is attached an Elkhart JN-200 fog nozzle. This nozzle will discharge 600 G.P.M. of fog. Solid stream tips can also be used on the stream master to discharge up to 800 G.P.M. if desired.

These features alone do not make the stream master an unusual fire fighting device; the notable difference between it and some other deluge, or master stream appliances, is the fact that the stream master is designed and built to operate with either one man control, or it will operate without anyone in attendance.

The Memphis Fire Department currently has 13 stream masters in active service. During the brief period of time they have been in use they have proved invaluable on a number of occasions.

Perhaps the most outstanding example of their application was the Esso Standard Oil Terminal fire in October of 1954. At this fire a number of stream masters were in continuous operation for over 24 hours, much of that time without personal attendance. Without their use the manpower demand on the fire department would have been much heavier than it was.

Again at the Rex Hotel fire, also, in last October, stream masters played a major role in holding a very hot, fast spreading blaze in check until all persons had been evacuated from the building. At this blaze they were placed in position to play heavy fog patterns on the open stairways of the structure. There were two of these stairways: one in the rear, which ran from basement to third floor, and one in front running from first floor to the third. Their operation materially helped prevent the spread of the fire to the upper stories of the two-and-three story brick joist structure.

Dual and Quad Cellar Pipes

Experienced fire fighters know that basement and cellar fires are about the most difficult they are called upon to fight. Because the fire may be difficult to locate and it may generate large amounts of heat, and be difficult to reach with sufficient volumes of water; and may prove difficult to ventilate, such fires can easily get out of control and may rapidly involve the entire building.

There is general agreement also between students of fire fighting that because of these factors and because fog nozzles are efficient in combating fires in enclosed spaces, they likewise should be efficacious in basement fire control and extinguishment. This is of course a safe assumption. However, there are two problems to be overcome in such situations. The first concerns the best method of applying the fog on a fire of this type, especially since most fog nozzles are designed for horizontal or lateral rather than vertical or perpendicular application. The second concerns the problem of applying water fog in sufficient quantity to overcome the high temperatures and charged atmospheres likely to be encountered in below-street-level fires.

The Memphis Fire Department has carried and used on occasion, several different fog "cellar pipes" manufactured by various equipment companies. Although these have proved satisfactory on small fires in confined spaces and limited areas, they were not as effective on large, deep-seated fires in extensive sub-surface areas as Chief Klinck and his officers desired.

After a particularly difficult cellar fire in a Memphis warehouse in the summer of 1953, the need for an improved cellar pipe or similar device that would overcome some of the abovementioned limitations became apparent.

Several months, and many designs and trials later, a drawing of a heavy-duty dual cellar pipe, capable of discharging 900 G.P.M. of fog, through two nozzles, was approved by Chief Klinck, and construction undertaken in the department shops. It was completed not long after and tested under varying conditions.

The basic design proved satisfactory although a number of "kinks" had to be eliminated. The appliance was rebuilt, again tested, and placed in service in the fall of 1954.

Construction was then started on another and somewhat similar nozzle, the basic difference being that the latter was designed to incorporate *four* fog nozzles instead of two, thus providing much greater volume and range of application. This piece of equipment was called the "Dual Cellar Pipe." Both pipes are designed on the principle of the back pressure of the individual nozzles being neutralized by each other. This naturally makes for easier handling of the unit and reduces the possibility of dangerous nozzle "kickback."

The first practical, extensive application of these pipes under actual fire conditions, was at the beforementioned Rex Hotel fire in October 1954. The fire, which involved most of the basement of the three-story hotel building, was brought under control after holes had been cut in the first floor of the building and the new cellar pipes operated through the apertures. This was a very hot, deep seated fire, for which three alarms were sounded and a total of some 27 hose lines in all used to supply the various appliances.

Applicators For "Indirect" Fog Application

Within the past few years a method of applying water fog on a fire, known as the "indirect method" has received considerable publicity. It is unnecessary to describe this development other than to say that basically it consists of applying or injecting the fog pattern into the super-heated air surrounding the fire, rather than to the flame itself, and counting upon the conversion of water fog to steam which, in turn, is carried on the currents of air to provide a smothering effect and blanket the fire itself.

To use this method of attack (where the officers in charge of operations considers it feasible), the Training Division of the Fire Department, following full

(*Continued on page 728*)

Training of Personnel Keeps Apparatus in Top Shape

Members of San Diego Fire Department Required to Take Instruction on Apparatus Operation

By ROBERT ELY
Battalion Chief, San Diego, Calif., Fire Department

Editor's Note: In 1947, Fire Chief George E. Courser launched a program to modernize the San Diego Fire Department shops. Each year since, as a detail of that program, new equipment has been added.

It takes a number of things besides good intentions to create and maintain at top efficiency fire department shops in any metropolitan city. It takes first of all money; funds to finance the physical plant, to equip it and maintain it so that those who operate it will not lack for the mechanical facilities.

It takes manpower. Not just any old manpower, but skilled, trained personnel, preferably men who were firemen and know fire fighting. It takes, also, supervision, organization and administration.

Chief Courser selected as the man to initiate his shop modernization program a man well known for his ability in this particular field—Battalion Chief Robert Ely. Chief Ely, in turn, chose men to staff and operate the department shops who possessed unique ability in their several vocations. Finally, Chief Courser and his top aides give their wholehearted support to the program as laid out, and to those who make the shops function.

A year ago one of the editors of FIRE ENGINEERING had the pleasure of spending some time with Chiefs Courser, Ely and associates. A highlight of that visit was an inspection of the department shops. Even more interesting than the inspection were the opinions and beliefs advanced by Chief Ely on the broad subject of maintaining fire apparatus and equipment.

At the request of the editors, Chief Ely consented to put some of his ideas, and an outline of activities in the shops into a brief precis for our readers. This is his abstract (with a few editorial revisions and additions) for which we are grateful to both the author, and to Chief Courser for his cooperation.

PROPER maintenance of fire apparatus and equipment is not only important, it is essential. Furthermore, because of this fact, the personnel responsible for the repair and upkeep of fire fighting facilities should be under the direct control of the chief of the fire department.

I believe they should be firemen, trained in the duties and responsibilities of firemen, as well as the mechanics of the various types and kinds of fire apparatus, pumps, engines, and all fire fighting equipment.

Only such men can hope to understand how the equipment is used; what is expected of it; and the importance of having the facilities always available for emergency response and operation without any failures, either in starting or operating.

A fire fighter who has fought a tough basement fire, or a fire two decks down in the hold of a ship, realizes what would happen if any of the equipment that was being used, and upon which his very life may depend, failed, whether it be the fire pump, engine, hose line or the mask that he and his fellow firemen wear.

A fire department can have the best chief available; a well-trained and efficient fire fighting force; good hose; modern fire apparatus and equipment; and a proper alarm system, but if the maintenance of those facilities is poor and if the fire apparatus fails to get the fire fighting force to the scene of the emergency, all is lost.

Training Manpower a Big Factor

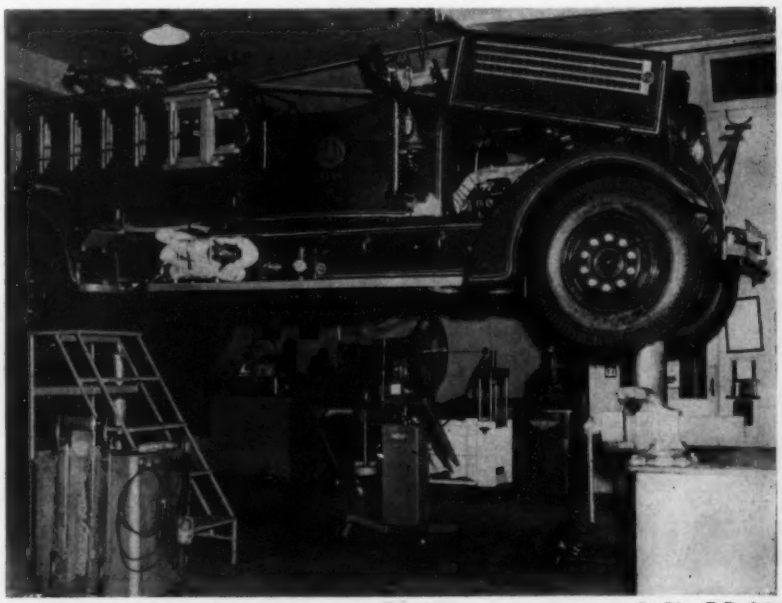
Men selected for the fire department shop should have a good mechanical background and good mechanical aptitude. It is almost impossible to find men who have all these qualifications and the necessary background. Therefore a proper training program should be devised and kept in operation.

It is better to have men who are willing to learn, who will study and have an interest in the job and will do what they are told, than it is to have men who think they know it all, and won't study and keep up with the times.

It is not just enough to have good tools; it is necessary to have men who know how to use them. In the San Diego Fire Department we have expert mechanics, machinists, welders, painters, carpenters, cabinet makers and pattern makers, and an upholsterer.

To keep good men in the department, it is also necessary to have good pay and proper working conditions. Just as in industry, when a man has special skills and he does his job well, he should be paid accordingly.

As in industry, to provide proper



San Diego F. D. photo

Fire apparatus on a twin post Weaver hydraulic hoist in the San Diego Fire Department shop.

San Diego F. D. photo

This unit is used to instruct firemen in the proper way to shift gears, operate the clutch, etc.

maintenance at a reasonable price, we must provide proper education in the use and operation of fire apparatus and equipment. That education must begin with the men who drive and operate the equipment, as well as those who maintain it.

Part of my job is to instruct our firemen in the proper operation of fire apparatus and fire pumps.

We have built a small pump on a tank-stand and, by turning cranks, our men can prime the pump, draft and pump water.

There are glass windows on the suction and discharge sides of the pump, making it possible to see the water when it comes up in the suction and again when it is pumped through the discharge valve back to the water tank. By opening and closing the discharge valve while turning the pump by hand, the men can actually feel the difference in the power required to pump more or less water.

We cut sections out of an engine, clutch, transmission and differential so that all the moving parts could be seen. We also fabricated a short frame and installed these components in proper sequence. The frame was then mounted on a stand so it would turn a complete 360 degrees and all the moving parts could be seen from different angles. We have hand-cranks to turn the engine and rear axles. The clutch, also, can be operated and the gear shifted.

Not every fireman is a mechanic and some have never seen the inside of a clutch or transmission. We do not expect the firemen to be mechanics but we do expect them to know what is on the other end of each and every control and lever that they operate.

By having these cutaway models the men can see what is at the other end of the controls. It is much better to teach proper gear shifting and clutch operation by this method because the men can see what they have to "fit together." It is also easier to demonstrate how damage can be done by improper operation.

We demonstrate the cause and effects of clashing gears. We are able to show the cause of any problems that the men have in operating clutches or transmissions. We can also put a sudden load on the rear axle.

All in all, men are able to learn much more from an able instructor and these mechanical cutaway models than they can possibly gain from booklore alone.

All Firemen Take Instruction

After our men have received instructions and completed practice on both of the above models, they are given instructions and practice driving and actual pump operation at the drill grounds and test pit.

All San Diego firemen are required to take classes of instructions in driving and operating as well as classes in hydraulics and satisfactorily pass a test before they are eligible for an examination for engineer.

Almost everyone wants to do the correct thing and I have found that when men are *shown* as well as *told* how to handle the equipment and are given the reasons why each operation should be performed a certain way, they learn quicker and are less likely to forget.

Cooperation Essential

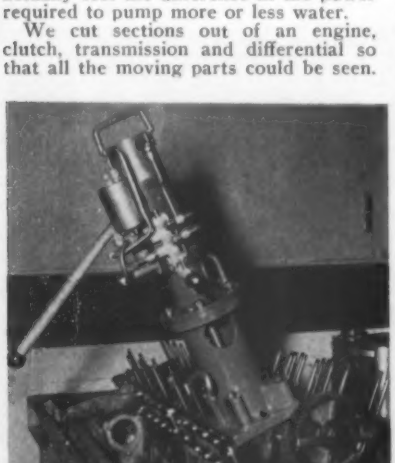
Good cooperation between the personnel of fire stations and the repair shop is very necessary for efficient and economical operation of the latter—and of fire department facilities in general.

Proper inspection of fire apparatus should be made by the station crew at least after every run, and any imperfections, malfunctions or unusual noises should be reported to the repair shop.

The personnel of the San Diego Fire Department repair shop always take the reported information seriously and let the men at the stations know that their cooperation is appreciated. When this is done many conditions are reported and are taken care of with minor adjustment, which prevent the necessity of major repairs or costly breakdowns at a later date.

If trouble is caused by improper operation of the equipment, the men are given special help and instruction in the

(*Continued on page* 729)

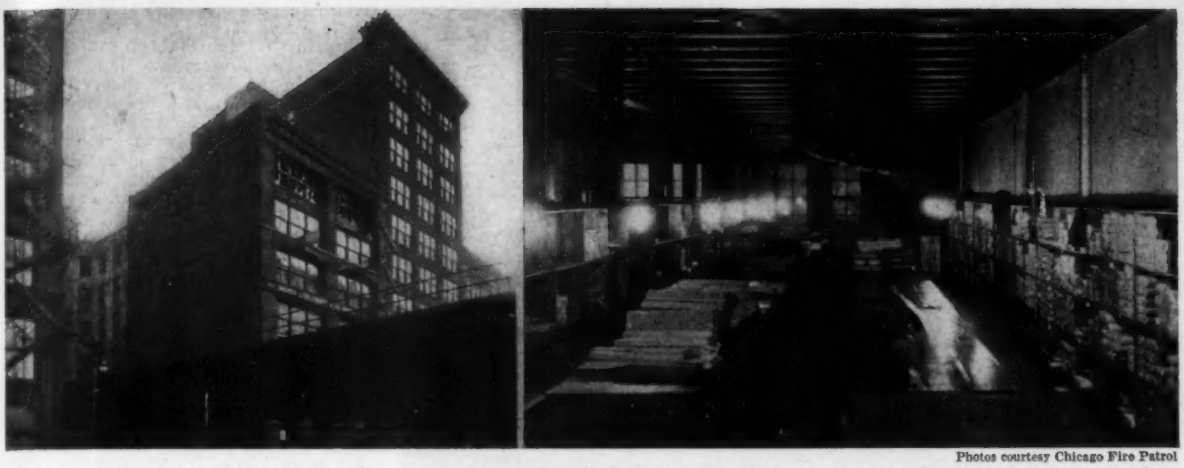


San Diego F. D. photo

Hydraulic sleeve puller built by San Diego firemen.

San Diego F. D. photo

Apparatus undergoing pump test at the San Diego test pit at Station 12.



Photos courtesy Chicago Fire Patrol

It took lots of water from Chicago's 4-11 alarm companies to extinguish this blaze on top floor of a South Market Street building. It took six Chicago Fire Patrols, using 345 covers, to prevent heavy water loss to lower floor occupancies including ground floor rooms of an auction company. This method of stocking and displaying goods is particularly susceptible to water damage. Note complete lack of moisture after salvage covers have been removed.

Overhaul and Salvage in Theory and Practice

Part V—*Continued:* Salvage Problems Growing More Complex. Is There Need of a Reappraisal of the Entire Salvage Question?

By ROI B. WOOLLEY
Assistant Editor, Fire Engineering

IN the first installment of this chapter the author endeavored to define what we mean by fire service salvage, as apart from maritime or other kinds of salvage. Emphasis was placed on two main loss factors resulting from fire: *direct and indirect loss.*

It is worth repeating that fully 75 per cent of our total fire waste is not directly traceable to damage by fire itself, but to factors kindred and incidental to fire. Of these, the two most important are water and smoke.

This will be admitted without question by the average fire officer, just as he will no doubt accept the average person's word for the number of stars in the firmament. But those who specialize in salvage will tell you—if you can get them to talk about it—that when the average fire officer thinks about fire waste and fire losses, he almost invariably visualizes a fire operation, and the resultant damage, as a composite picture. His viewpoint, like his interpretation of the loss statistics, is largely in terms of fire, and the fire damage. This is damage he can see and visualize.

You cannot expect him to attempt to evaluate the worth—or the reverse—of wrecked property and furnishings; of sodden, soaked, singed and soiled stocks that are "left over" from the fire extinguishing operations, but which may not be beyond some reclamation and salvage. Nor can you expect him to be too concerned about the "indirect losses"—those factors such as stoppage of production; loss of customers, loss of pay by employees, and the like. And it is a safe assumption that rarely does the fire officer in his loss estimate or evaluation attempt to weigh the damage caused, whether of necessity or poor firemanship, *by his own fire forces* in their operations.

A little later on we will get more into the science of salvage and its relation to the science of fire suppression. Before this is done however, the progressive fire fighter may well ask himself, have I the right approach to and understanding of fire losses; do I appreciate *known,* and direct *fire* loss as contrasted with the indefinite, *indirect* damage? And most important, he should ask himself if he is interpreting fire losses, direct and/or indirect, with the possibilities of salvage—of recoverability and reclamation, in mind.

It has well been said that only when a fire fighter can appreciate the immediate and real (direct) damage from fire, as he would if the fire were on his own property, is he fully able to comprehend the true meaning and possibilities of scientific, efficient salvage.

Sometimes one wonders if the day will ever come (it would indeed be a sort of Utopia) when a fire chief will be able to set forth his "fire losses" in three ways: (1) loss by fire itself, what the fire actually damaged; (2) loss by water, and (3) loss by smoke and fumes. It is of course too much for any person, including a fire chief, to attempt to set down all the indirect, or imponderable losses. Loss from fire can indirectly be so far reaching in its ramifications that it can never be reduced to statistics.

And there's that companion dream—

Editor's Note: **This, the second section of Part V, is continued from the July issue. In that issue the author endeavored to define fire service salvage, relate it to fire attack and analyze fire losses direct and indirect and explain what these losses mean to the public and the fire service.**

In this installment, the author lets his imagination conjure up some Utopian visions, then settles down to the serious side of scientific salvage as contrasted to scientific fire suppression.

Again he quotes a number of outstanding authorities, to whom we extend grateful acknowledgement.

Photo courtesy Cincinnati Salvage Corps

This five-alarm downtown Cincinnati, Ohio, fire gave the Underwriters Salvage Corps, under Chief John Frank and Chris Williams, Business Manager, workout over a wide area to minimize exposure damages from smoke and water, as well as actual fire losses to the Midwest Salvage Co., which suffered the fire.

what an education it would prove that if, to these three fire losses were added a fourth dimension: loss to property, building and occupancy—*attendant upon the fire control and extinguishment and overhaul operations;* or, to put it more bluntly, damage done by fire fighters themselves.

The only reason for injecting this thought is to perhaps suggest to our readers the wisdom of getting a proper perspective of the whole problem of fire service salvage, measured not merely by the broad, customary "fire damage" figures but with an eye to those kindred, indirect damages we've already talked about. Although it is of course too much to expect, it requires little stretch of the imagination to appreciate what it would mean to the heads of fire forces, and to city government, to have within their ken the actual—or even approximate amount of damage, in dollars-and-cents—wittingly or unwittingly, perpetrated by their own fire forces in suppressing a fire. Probably nothing in the world would precipitate such a "revision upward" in the strategy and techniques of fire control and extinguishment, as would having this factual evidence at hand. How many windows, roofs and how much home furnishings would be preserved for posterity in our future fire fighting and salvage if we had, and properly used, this information.

But enough of visions: we are faced with today's and tomorrow's stark realities, and we must base our study and thinking upon things as they *are*, and not as they *might be*, or as we would like to *have them*.

Salvage, Like Fire Fighting, Becoming More Complex and Complicated

One of the first things the student of fire service salvage must realize is the simple truism that just as the modern fire fighter's task is becoming more complicated, more complex, and more dangerous, so too is the problem of salvage. Because, we repeat, salvage is inherent with fire fighting and fire control. No longer can the professional fire fighter disassociate the two functions. They go as closely hand-in-hand as ladder and hose operations.

If one doubts this growing complexity let him study the fire loss figure published by the National Board of Fire Underwriters, the National Fire Protection Association, the National Fire Waste Council and other fact-finders. Even the monthly "What's Burning" columns appearing in FIRE ENGINEERING provide mute testimony to the problem.

Nearly a quarter of a century ago, Daniel Shire and Lindon Murphy* wrote: "Firemanship today constantly presents new challenges to the alert fireman. As buildings have grown from one or two-room frame structures to veritable giant beehives, some stretching many stories upward, the fire fighters' problems have similarly increased. Chemical and electrical hazards have added to the complicated structural hazards.

"The science of firemanship has nevertheless kept pace with the growing complexities of fire fighting. The intelligent use of ventilation, the utilization of small streams on minor fires, and the scientific control of chemicals involved in a fire are all recent developments in the art. To this list should now be added the organized practice of salvage principles."

From which it will be seen that over two decades ago some folks believed that the science of firemanship was keeping abreast of the growing complexities in fire fighting. This, however, was before the chemical and atomic era really set in. Today there are altogether too many fire fighters who cannot relate science and firemanship and who still believe in the dog-eared theory that the best way to put out a fire is to "drown it out with plenty of water."

Let us look at some of these modern developments that are influencing and affecting fire fighting and salvage operations—and concurrently, of course, direct and indirect fire losses.

In the field of construction for example. Buildings continue to increase in area, height and in features that while the structures may appear to the layman fire resistive, nevertheless their peculiar hazards increase the fire control and extinguishment (and salvage) problem.

The tendency toward buildings of large, unbroken areas, windowless walls, and heavy roofs of all-glass and plastic siding has an adverse effect upon salvage work just as it has upon fire fighting operations. Automatic air conditioning, heating and humidifying; accoustical ceilings; built-in fluorescent and other type concealed lighting systems; all offer new, and in some cases unsolved problems, for the fire fighter and salvageman.

Occupancies continue to grow in extent and diversification. New products, and new manufacturing processes appear daily, presenting new headaches and hazards for the fire fighter. The number of businesses engaged in the chemical industry staggers the imagination. So, too, does the array of manufactured articles in stores and shops. The old-fashioned drug store has now become a department store. So, too, has the Five and Dime! All are crammed with merchandise, most of it combustible, not even dreamed of a quarter of a century ago.

Some of these products are a boon to the fire fighter and salvageman. Others are a bane. Take plastics, for example. There is today scarcely a field of endeavor in which plastics do not enter. These new plastics and their increased use naturally effect salvage, as they do the problem of fire extinguishment.

Under certain conditions, where plastics are substituted for metal, as in toys and household articles, there is likely to be less water damage due to corrosion and/or rusting following a fire. Many types of plastics are impervious to water and smoke damage. Others encourage heavy, if not total losses because of the susceptibility to spoilage.

The increased use of plastics as closures and containers, for packaging and storing clothing and other damageable articles, is looked upon by many salvage experts as an asset in promoting salvage. On the other hand, the use of plastics for hung ceilings may add to the headache as it may to the fire fighting problems.

The Nation's Storages Are Fantastic, and Growing

The problems of "scientific" salvage assume still further complexity when it comes to storage. Never in its history was the nation so crowded with surpluses of both raw and manufactured products. Never was storage space at such a premium. To store the surplus wheat alone, inactive transports and freight carriers are being pressed into

*"Practical Salvage Suggestions for the Fire Department." Bulletin 112 Pub. by Iowa State College of Agriculture and Mechanical Arts. 1932.

service. Not only afloat, but afield, makeshift warehouses are being crammed with materials, much of it perishables and practically all of it combustible under certain conditions. A little fire in or near stocks of these perishables and incidental damage can be many, many times the loss from fire alone.

Up to the present there has been little concerted effort and less action on the part of the fire service to study the salvage problems presented by these and other bulk storages and to come up with some solutions of the problems they present. That is why, perhaps, fire losses in this field have continued to increase, whereas in certain other classifications they are, at least for the moment, showing a decrease.

It may be of more than passing interest to learn that our Government's Public Buildings Service alone operates and maintains over 120 million square feet of office space; 2 million square feet of records storage space; approximately 6 million, 250 thousand square feet of warehouse space for the Federal Supply Service, including the warehouses serviced for the Federal Civil Defense Administration; and 8½ million square feet of warehouse space for General Service Administration owned buildings in connection with the Emergency Procurement Service.*

These are only isolated government occupancy data. They pale into insignificence when you consider the countless agricultural, industrial, mercantile and other storages.

The susceptibility to damage from fire, water and/or smoke, varies naturally with the different products involved. The results of salvaging operations will, when most successful, call for a knowledge of the effect of each of these three forms of injury upon different kinds of material and products.

It is not too much to say that practically every one of these products of our age must be studied by the salvage specialists.

Fire Extinguishing Agents Also May Be Blessing or Bane

We have pointed out that the tempo and complexity of American living and working have produced and are developing new hazards and new fire extinguishing problems, and that the fire service is making every effort to keep abreast of these developments by perfecting improved control and extinguishing methods and material.

The practice of fire salvage is seriously affected by these evolutions. In a sense, the service is caught on the horns of a dilemma. Because, in one instance the extinguishing procedures may prove helpful to salvage operations; in another they may prove just the reverse.

Take the question of automatic sprinklers for example. Every fire fighter appreciates the value of sprinkler systems in subduing fire. Yet nearly every fire fighter has at some time experienced the unpleasant malfunctioning of a sprinkler system, where the water damage greatly exceeded the damage by fire, or where fire was not involved and the sprinkler system was activated by some other cause.

Many more buildings are now equipped with sprinkler systems than ever before (for which fire fighters are generally thankful), but by this same token, the possibilities of loss due to sprinkler leakage is multiplied accordingly.

As we shall see later in our studies, although automatic sprinklers unquestionably are the No. 1 fire-stopping facility, they can cause heavy indirect water damage. The average sprinkler heads, deliver approximately 10 to 20 G.P.M. at normal water pressures. Fire chiefs would not have this reduced, if they could help it. In fact, the flows are increased in certain types of occupancies, both as to discharge of the individual head, and by decreasing the distance between heads, or increasing the number of heads within the area to be protected.

Anyone who has seen what a single pail of water can do to flood out a floor, or soak a wall or furnishings, can appreciate the need for prompt control and supervision of sprinkler systems.*

The National Board of Fire Underwriters in its Special Service Bulletin No. 21 has this to say: "Water damage is a material factor in practically all fires. It is especially important in connection with plants protected by automatic sprinklers. Such systems are designed to spread water over an area of 80 to 100 square feet for each head and with this distribution there is bound to be considerable damage. For this reason all sprinkler systems should have devices which will sound when there is a flow of water. Commonly, such devices are only a gong on the outside of a building. To be effective as a means of reducing water damage, such appliances should be connected up to fire alarm headquarters" (or be under constant supervision by an agency that is, in turn, connected with fire headquarters, Ed.).

Every fire department that undertakes salvage operations where there are sprinkler systems within its fire district, appreciates the importance of exercising prompt, thorough and painstaking judgment in shutting off sprinklers at a fire. This is also emphasized by the National Board of Fire Underwriters and other organizations interested in sprinkler protection (N.B.F.U.-S.S. Bulletin No. 21). The majority of fire departments also recognize the need for training personnel in sprinkler operations, and for having the requisite sprinkler shut-off tongs, or other equipment, readily available.

Another invention of recent years which has to do with sprinkler systems and consequently with salvage operations, is the lift or fork truck. Careless operation of these devices may knock off a head, or break piping that will release a veritable Niagara upon building and/or contents.

On the asset side of the sprinkler ledger, however, are the improved type sprinklers which deliver varying degrees

**Details of sprinkler installations, etc. are contained in the Standards of the National Board of Fire Underwriters for the Installation of Sprinkler Systems. Pamphlet is available on request.

Photo courtesy Milwaukee Fire Department

Milwaukee firemen and salvage corpsmen struggle to reclaim contents of burned locker and record rooms during the serious fire in the Eagles Club, March 6, 1955. Destruction of organization and business records may constitute serious and costly indirect loss. That is why quick, thorough salvage work is essential.

*From Fire Protection in Government Warehousing, an address by Charles A. Peters, Director, Buildings Management Division, General Services Administration, at the NFPA Conference, Cincinnati, 1955.

of spray, from a fine fog to a coarse spray, the discharge characteristics being determined by analysis of the kind and value of the property to be protected. Water damage in time of malfunctioning, or injuries to the system, may thereby be materially reduced. Obviously, salvagemen should be thoroughly familiar with all the types of sprinkler systems installed in their area, or that may be so installed. There is ample such educational and instructional material available.

Wet Water—Mixed Blessing?

Another of the extinguishing agents that is both blessing and bane is "wet water," as it is commonly known. Wetting agents are excellent extinguishers where penetration of stocks and materials is essential. They reduce water runoff and in this connection, it might be thought that their use therefor would reduce water damage. However, their very penetrating qualities provoke problems for the salvageman because they tend to negative the effectiveness of salvage covers.

On the other hand, water treated with a good wetting agent properly applied, will greatly reduce the need for overhauling (and further damaging) many stocks, such as cotton and other baled materials, overstuffed furniture, mattresses and the like. Thus, again, we see the need for fire fighters, and salvagemen continually having to readjust their techniques and procedures to keep pace with the times.

Time for Reappraisal?

Many leaders concerned with the problems of fire waste believe it about time for a thorough review and reappraisal of the entire question of salvage as related to fire extinguishment, and vice versa.

The public, notwithstanding such efforts as have been put forth to educate it, knows little or nothing about salvage as related to fire. And, although the author dislikes to admit it in its broad sense, the subject is still Greek to too many fire officers.

Photo courtesy Underwriters Fire Patrol, Kansas City, Mo.

Quick, efficient protection of first floor clothing stock against water used in second floor fire extinguishing operations by the Kansas City Fire Patrol, Chief William Gardner, during the multi-alarm blaze enabled the Union Credit Clothing Co. to carry on business practically without interruption. This is coverage against possible serious direct and indirect loss.

The result of this ignorance, or indifference, is that fire service salvage does not receive the recognition or credit which it deserves. This, in turn, has a deterrent effect on the adoption of improved salvage methods and material within the fire service itself.

Another factor which bears directly upon fire service salvage is manpower. At a time when the importance of effective salvage was never greater, many municipal fire departments are reportedly sidetracking salvage because they claim they do not have sufficient personnel to handle such operations.

Although this subject will be discussed in greater detail later on, it should be said here that there is sufficient manpower available in most municipal fire departments, if one considers the total strength of the fire force, not merely the personnel responding to the initial alarm. It is true that salvage operations should preferably begin with that initial response, and it is likewise true that on-duty fire crews today are so short-handed that it is all they can do to make an effective attack upon the fire itself—opening up, ventilating and, above all, initiating rescue operations, as well as bringing extinguishing agents into play on the fire. But in fires of any magnitude or serious threat, reinforcements are not long in coming and there is little excuse for not employing some of these reserves in salvage work. How often do you note at working fires the number of firemen who are not engaged in either fire control or salvage operations but are merely standing by, some of whom could be employed effectively in performing salvage operations?

Perhaps there will be some disagreement with these statements, but the very disagreement should attest the wisdom of a reappraisal of the entire subject of salvage.

The susceptibility to damage from fire, water and/or smoke naturally varies with different products and materials, and it should be obvious that the results of salvaging operations will, when most successful, call for a knowledge of each of these three forms of injury, or potential injury, upon different kinds of material.

The National Board of Fire Underwriters, the National Fire Protection Association and the International Association of Fire Chiefs are continually revising the Standards for Salvaging Operations. In this connection, the dictionary of basic, raw and converted materials which may be involved in fire, is likewise being revised. This is essential reappraisal. But it is of no value if not learned and used by the fire service, particularly those charged with salvage operations.

Photo courtesy Worcester Protective Department

Proprietor of this Worcester, Mass., establishment watches removal by Worcester Protective Corpsmen under Superintendent Lorton S. Walden of final evidence of a multiple alarm fire control operation which, but for fast, thorough salvage operations, would have put him out of business. Restaurants and inns stocking "perishables" are particularly vulnerable to fire, smoke and water.

Boy, 6, Takes Chief's Request Seriously

Fire Chief Wayne E. Swanson, of the Rockford, Ill., Fire Department, and vice-president of the International Association of Fire Chiefs, was a bit baffled not long ago when a 6-year-old boy walked into his office and handed the chief a package of book matches.

"Why are you giving me these?" the chief asked.

"You told me to," he youngster replied. Chief Swanson was preplexed—until he remembered some of the lectures he has been giving recently, in which he urged children to turn in matches they find to adults or firemen, rather than to play with them.

FIRE DEPARTMENT BETTERMENT PROVES PROFITABLE INVESTMENT

Saving in Insurance Premiums Amortizes Investment in Short Period

By George Coolures
Chief of Fire Dept., Merced, Calif.

ONE of the most difficult, if not impossible, tasks confronting officials of a Fire Department is determining the insured value of the city or within the area of its jurisdiction. The reason this information is so hard to get is because of the number of insurance agents which do business in a city; or a great many of buildings and their contents may be insured by out-of-town agents or companies. Furthermore, where you have severe risks, the insurance companies may only insure a certain portion of the total, which of course means there may be as many as ten companies insuring the one risk; and some of these insurance companies may be in the city and some may be outside the city.

Some people might ask of what value are these figures and how can you use them? One of the best uses that I know of is to show your bosses, the taxpayers of your city and the governing body, what the Fire Department means to them in dollars and cents. That is about the only thing that impresses people. Knowing these figures in our own city did help us to put over a quarter million dollar bond issue, because we were in a position to show how much the people were actually paying to insure their holdings and also the relationship of assessed value to the insured value of their particular holdings.

Of course these figures are only approximate, but can serve an important purpose until such time that a better formula can be devised. Also, to a great many people, the Fire Department is regarded as a non-revenue producing department. But if you can show the taxpayers that by maintaining a good Fire Department, it means money in their pocket, saved in insurance premiums, it seems to make them see the point. In our case, we save the taxpayers $154,000.00 a year. That's a lot of money to take in, by any revenue-making department, in a city of 18,000 inhabitants.

We started by spot-checking different types of risks, such as homes, apartments, industrial, mercantiles, schools, churches, public buildings, etc., and found the basic figures to get our formula, such as:

1. The percent of the assessed value to the insured value which in our case was about 20%. (A building assessed at $2,000.00 was insured for $10,000.00.)
   So, we established our basic figures in determining the total assessed value and the total insured value which, in our city, were 22 million assessed value and 110 million insured value. The assessed value of course can be obtained at the tax office.
2. The next thing we had to determine was the average cost of the premium, which in our case was 40 cents per $100.00 as a Class 5 city. This took into account all types of risks including contents. By doing this, we determined that our total insurance premiums was $440,000.00, which was determined by the following formula: To find the number of $100.00 units in 110 million dollars (insured value) you divide by 100, thus: $110,000,000.00 ÷ 100 = 1,100,000 $100.00 units. This answer, times the insurance rate of 40 cents, $1,100,000.00 × .40 = $440,000.00 total insurance premium.

In computing the insured value of a city, the assessed value of the land, which cannot be figured in the insured value, is offset by contents, public buildings, schools, churches, etc., which do not pay taxes but do carry fire insurance. Then to go a step further, we showed the people the difference between the total that they paid in ad valorem taxes and insurance premiums. Of course, our insurance premium has been established at $440,000.00. The total taxes in our case are $220,000.00, which is determined by tax rate times assessed value. Our tax rate is $1.00 per $100.00 assessed valuation, and the assessed valuation is 22 million dollars.

22 Million ÷ 100 = 220,000 $100.00 units.

220,000 × $1.00 = $220,000.00.

These figures showed that the public were paying twice as much for insurance as they were for taxes, or $440,000.00 for insurance and $220,000.00 for taxes. We then went a step further and showed them how much we could save them in their insurance premiums if they voted the $250,000.00 bond issue. This estimate was secured by asking the rating bureau what percent we could expect to save; we were told approximately 30 percent, by dropping from Class 5 to Class 3, or approximately $132,000.00. By taking 30 percent of $440,000.00, we had the actual figures, or $154,000.00, secured as follows:

Our premium was $440,000.00. Our new rate is 26 cents and the old was 40 cents, or a savings of 14 cents per $100.00 value. As there were 1,100,000 such $100.00 units, 1,100,000 x .26 = $286,000.00, the new insurance premium. The saving would be $440,000 — $286,000 = $154,000. Thus the bond issue would amortize itself in 1-2/3 years. Our bond issue went over 4 to 1; we went to Class 3; the people saved $154,000.00 and we have a Fire Department we are all proud of, and we are now shooting for Class 2.

We believe that the people of our cities should be made aware of these facts because the Fire Department is a definite revenue making department in the true sense of the word. Their job is twofold.

1. To keep the tax roll secure from the ravages of fire; burned buildings have no value and pay no taxes.
2. An efficient and modern Fire Department will be an asset when your city is graded by the Underwriters; you can save the taxpayers a great deal of money with a lower rating.

Four Women Hurt In Blast

Four women were injured, one so critically that she may lose her foot, in an explosion at the West Coast Loading Corp., Rialto, Calif., near San Bernardino.

Fire investigators said the blast occurred in the portion of the plant in which pyrotechnical materials are fashioned into flares for the armed services.

—PAUL DITZEL.

A Hot Time in a Summer (Foam) Snowstorm!

Looks like they're modelled in clay — wet clay, these fire fighters, operating amid a fog-foam "snowstorm" on the Hudson Oil Company fire, south of Topeka, Kans. The hot gasoline fire broke out when a teen-ager accidentally backed his car (background) into a gasoline pump, rupturing it. A spark touched off the blaze, which threatened three 12,000-gal. storage tanks only 15 yards distant. Foam fire apparatus from Forbes Air Foce Base nearby were sped to the scene and when they let loose their foam barrage the scene looked like it had been hit by a winter storm. But the fire was successfully "blitzed."

SIX DEPARTMENTS COOPERATE IN CONTROLLING BIG HAMMOND FIRE

Neighboring Communities Lend a Hand in Checking Multi-Million Dollar Blaze

THE worst fire to strike Hammond, Ind., in over 50 years gave the city's fire fighters, aided by forces from half a dozen other communities, a strenuous day-long battle before the blaze was finally declared controlled. In that time the holocaust razed a three-story brick Great Lakes warehouse, having floor area of 86,000 square feet; destroyed most of the American Chemical Service Co. and sections of the Pratt Food Co. and Paxton Lumber Co. The fire communicated to a six-story Great Lakes Warehouse, crowded with combustibles, but was stopped there. The property loss, as yet unsettled, is reported between $2½ million and $4 million.

The blaze reportedly resulted from a rubbish fire that was blown by gusty winds onto a warehouse loading platform. From that point it entered the warehouse and was out of control before fire fighters had a line on it. Two companies of Hammond firemen were reportedly delayed in their response by a slow-moving railroad train.

From the warehouse, said to be one of the oldest in the region and loaded to capacity with miscellaneous commodities, many of them highly combustible, the flames spread to nearby exposures, including the chemical firm, feed storehouse and the six-story warehouse.

Feeding on various flammable liquids, chemicals, lumber, paint, etc., the blaze roared through the long three-story building, then leaped to the American Chemical Co., manufacturers of solvents and paints. Here drums of naphtha touched off a series of explosions that resembled miniature atomic bomb blasts, throwing steel rims of containers 100 feet into the air. The detonations could be heard for miles, and the rising cloud of black smoke darkened leeward areas for hours.

Fire fighters were hampered by the westerly winds, which at times attained nearly 40 miles per hour.

The first alarm was received by Hammond Fire Department shortly after noon, May 5th, and Fire Chief William Tamm lost no time calling far aid. Besides the entire Hammond force, assistance came from a wide area. Gary, Ind., dispatched three pumpers and a ladder truck (this city simultaneously fought a junkyard fire that required additional hours of work because of the shortage of men and equipment resulting from the dispatch of aid to Hammond). Men and equipment also came from East Chicago, Whiting, Calumet City, Lansing and Munster. Over 150 fire fighters, assisted by volunteers, fought to stem the onrush of the blaze, and succeeded some 20 hours later. A contingent of 65 Hammond firemen remained at the scene most of Friday, May 6, to extinguish the remaining flames and guard against rekindles. At 10:00 A.M. on that day it was estimated that more than 2,000,000 gallons of water had been poured through the windows of the upper floors of the big six-story warehouse.

Fire swept quickly through this warehouse at Hammond, Ind., and communicated to adjoining structures.

Photo by Stephen Lasker

Wetting down ruins of three-story warehouse at Hammond.

Firemen Forced to Operate Over Railroad Tracks

Besides the wind and the initial delays in getting fire forces into action in the early stages of the fire, firemen were forced to lay out long lines of hose and to operate over railroad tracks, through fenced-in areas and under constant threat of explosions and falling walls.

At one point, 15 firemen narrowly escaped injury when they moved an aerial ladder seconds before a section of the west wall of the warehouse collapsed. Time and again they were driven back by outbursts of the fire, as flammable liquids let go.

Most firemen believed they had the blaze licked about 4:30 P.M. on the 5th, when they began hacking their way through windows in the upper floors of the bigger warehouse. But soon after that the fire built up and appeared to get out of control. However, more tons of water, directed into the building from ladders, turrets and hand lines, finally turned the tide.

The heaviest losses were said to be to stocks in the basement of this large warehouse operated by the Inland Trading Company. Much of it consisted of food, and water and smoke spoiled what the fire did not reach. Storage in the 12,000 foot basement of this structure were said to be valued at $1 million. Firemen succeeded in saving grain-filled elevators at the Pratt plant, and 130,000 gallons of naphtha in 10 railroad stationary tanks at American Chemical.

The area swept by flames is bounded by the New York Central railroad tracks on the south; the Indiana-Illinois boundary line of Industrial road on the west, Hohman avenue on the east, and the Grand Calumet River on the north.

The conflagration brought out all the area's disaster units, including civilian defense and Red Cross workers, and large squads of police which were necessary to control the more than 8,000

Photo by Stephen Lasker

Flammable liquids add to intensity of Hammond blaze.

spectators who were on hand. State and other police from Indiana and Illinois did their best to keep highways open for incoming fire forces.

Miraculously, considering the extent and magnitude of the operation, no fireman was seriously injured. Some nine were treated for injuries but of these only one hospitalized. Ambulances and medical forces were in attendance throughout the struggle.

Small Town Girl Gets Bang Out of Big City

Mary McAuley, 24-year-old instructor at the University of Illinois, made the headlines when she got in the way of Engine 65, New York Fire Department, touching off a spectacular crash that involved eight vehicles, and injured ten persons.

Miss McAuley was driving alone eastward on Fifty-second Street, Manhattan, at 10:15 A.M. on June 23, last, when traffic was stopped at Seventh Avenue to let two pieces of apparatus from Engine 65 go by. The company was responding northward, from its Station at 33 W. 43rd Street, to an alarm turned in for an explosion in a dry-cleaning shop at 205 W. 53rd.

Engine 65, a two-piece company (normally), consisting of a hose wagon and pumper, was making average time up the avenue which had its usual load of traffic. Miss McAuley dutifully stopped and let one unit pass, then continued across the avenue. She said later she didn't see the hose tender until it was too late. Fire authorities, however, assert that she drove against a red light.

The teacher's car hit the left front wheel of the heavy pumper and swung around twice. There was no time for Fireman Driver Andrew J. Plunkett (one of the top "whips" of the company) to do anything except try to straighen up his unwieldy apparatus without wrecking the neighborhood. He managed to swerve past a taxi with only a glancing blow. But this was sufficient to careen that vehicle into a private car alongside.

Next in the path of the fire truck was a car occupied by Edgar Meyers, of Queens, who was driving his three children to the movies. While Meyers prayed the truck would miss him, Fireman Plunkett managed to steer past his car without more than taking off a headlight. That contact however, sent the apparatus head-on into a taxicab, close behind which was a southbound bus.

The taxi, caught between bus and fire truck, was badly crushed. All three vehicles then came to rest against two unoccupied vehicles parked at the curb.

From the driver's seat of the taxicab, firemen and police extricated Nicholas J. Ciocci. He suffered only a bruised head and ankle. From the wreckage of the rear seat they removed his female passenger, who was hustled to the hospital with broken shoulder and ribs. Also dispatched to the hospital was a passenger on the bus who was treated for bruises. Two women, a man and a five-year-old girl were treated at the scene, and released to their homes.

Fireman Plunkett, although he stuck to his swerving truck, miraculously escaped with only a slight cut over one eye. He and the bus driver, who received a shoulder injury, were treated and sent home.

Miss McAuley received a summons to appear in court for failing to give fire apparatus the right of way. Ironically, she had received another summons early that same morning for breaking parking regulations.

The incident spurred Fire Commissioner Edward F. Cavanagh, Jr., to put into action a summons-serving campaign which had been previously drawn up, whereby fifteen "light-duty" fire fighters would ride mid-Manhattan fire apparatus in the troubled traffic districts to issue tickets against motorists who "willfully endanger themselves, other drivers, and firemen."

L. A. Firemen Aid Police

Los Angeles City firemen teamed up with Los Angeles, Calif., police on the morning of July 11 to help capture a holdup gang at a Southeast Los Angeles supermarket.

Four holdup men had been surprised by police as they were looting Raisin's Market, 120th St. and Avalon Blvd. One suspect was shot to death, one wounded, and one captured after a wild, blazing gun battle.

Then extra squads of police armed with tear gas and shotguns surrounded the market. Dozens of gas shells were pumped inside, but the remaining member of the gang refused to come out.

Finally L.A.F.D. Truck 64 was summoned and firemen placed ladders on the roof so police could check all possible exits or hiding places.

Then, under the watchful eyes of the heavily armed cops, firemen placed blowers at the market doors to help clear away some of the heavy fumes.

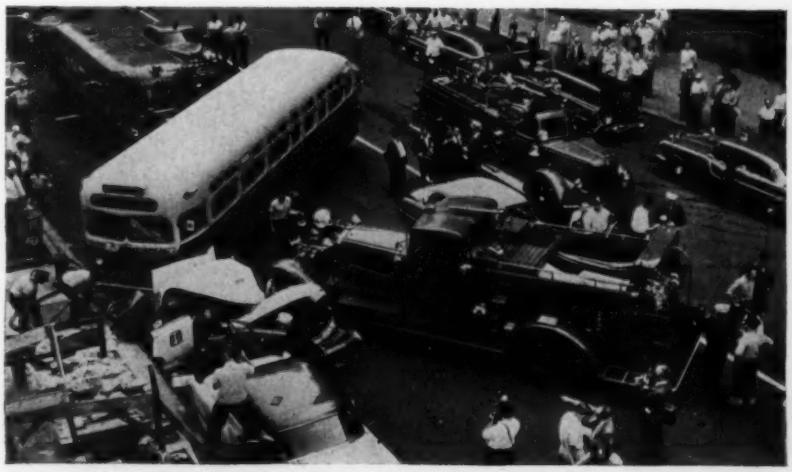
Battalion Chief C. R. Johnson, Battalion 13, needed additional blowers and Salvage 14 was dispatched.

After some of the gas was cleared, officers found the suspect cowering in a vegetable bin. CLIFF DEKTAR

Another Rate Reduction for Puerto Rico

The Puerto Rico Inspection and Rating Bureau has just announced another fire insurance rate reduction for the island, which will represent a saving in premiums of over $400,000 per year.

This is the ninth reduction granted by the Bureau since Chief Raul Gandara inaugurated his fire protection improvement less than a decade ago.



Because she didn't see the "second rig" of Engine 65 en route to a fire, an Illinois teacher drove through a red light and hit the pumper shown in photo, which precipitated a Donnybrook that involved seven other vehicles, and injured eight persons, including driver of apparatus. Shown are some of damaged vehicles, emergency rigs and firemen of Engine 54 washing away gasoline. (Note how conveniently the bus came to stop at the hydrant.)

FIRE WALL AIDS IN CHECKING BLAZE IN LARGE RR SHOPS

Twelve Fire Companies in Mutual Aid Area Combine to Bring Fire Under Control

By John D. Klinepeter

At approximately 5:55 p.m. May 11, flames were discovered leaping from a window of an air compressor and electrical switchboard room at the south end of the Pennsylvania Railroad's carshop at Enola, near Harrisburg, Pa.

Within two hours, the 300-foot-long building had been two-thirds destroyed by flames, with a loss estimated by railroad officials several days later at "approximately $300,000."

The long, open corrugated sheeted structure was of wide open construction, housing supplies and materials used in railroad freight car repairs, tools of all types, a locker-room which served 300 employees, all of whom worked 7 a.m. to 3 p.m., a cafeteria, and kitchen.

The building was empty of workmen at the time of the fire, the crew having quit nearly three hours earlier.

A later investigation proved the fire had been caused by a defective switchboard in the compressor room.

Unchecked, flames swept through the entire structure within a matter of 15 to 20 minutes, until flames reached a firewall between the damaged area and a machine shop and blacksmith shop. Here the further spread of the blaze was halted by firemen.

Firemen from 12 companies of the West Shore Area, just across the Susquehanna River from Harrisburg, were called by two-way radio from the recently erected control center for that area.

Harrisburg firemen were not alerted by this means, as they have no radio facilities and thus were not called into action. The Lemoyne company, with three pumpers, was left idle also because they had never installed a radio system.

The blaze was discovered by car shop foreman H. R. Boyce, who immediately telephoned to the radio control center for help.

Within five minutes, the first companies from Enola began arriving, to find water hydrants, but not a sufficient number for a blaze this size.

PRR men from the yards and shops helped fight the blaze, aided by an ancient pumper owned and housed by the railroad company at the nearby roundhouse.

Firemen were held at bay by the intense heat until the roof had collapsed, and then had to protect themselves by taking shelter behind work platforms that were carried to the area and set up.

The water supply was insufficient to allow the use of deck guns or deluge sets, but was enough to supply eight 2½-inch lines, some of which were wyed to 1½-inch fighter lines.

The greatest loss was in material and tools. Tools not actually of a combustible nature, such as drills, reamers, etc., had the temper removed by the intense heat, and were useless as far as salvage at a later time.

Great piles of roller bearing boxes and pressure bearings for car wheel journals were also rendered useless by the heat.

A smaller loss, but one of a far reaching nature, was that of manifests from approximately 500 freight cars awaiting repairs and securing of shifted ladings on nearby tracks. The cars were not damaged, but with the manifests destroyed, nothing was known of the lading, shipping point or destination of the cars. Of the 500, it was ascertained the following day, only 260 were loaded—the remainder were empties, but this didn't lighten the job of painstakingly opening each one, taking inventory, and attempting to locate either the shipper or would be receiver of the lading.

The Enola car-shop serviced light repair cars for the Enola yard, which is considered the largest single railroad freight classification yard in the United States.

The blaze and smoke were visible for miles, attracting such a jam of spectators that two miles of adjacent routes 11 and 15 were closed to all traffic by PRR police and fire police of the various responding fire companies.

Firemen enjoyed one privilege—they were not hampered at the fire scene by spectators, as no person was allowed on PRR property except firemen and company officials of the railroad.

The responding companies were from three counties, York, Cumberland, and Perry, and included three from Enola, Summerdale, York Springs, Silver Springs, Fairview, West Fairview, Marysville, Camp Hill, and Lower Allen Township. Lemoyne was called later to assist in the overhaul operations.

PRR Fire Marshal Joseph R. Vallely was in charge of the fire fighting operations.

Enola and neighboring fire companies battle big railroad shop blaze at Enola.

N.Y.F.D. Cooperates with Press

One of the most delicate and controversial subjects in the entire field of fire fighting and fire department administration has been that of relationships with the public press.

It was bad enough in the old days, before radio and television, but since the advent of the latter, the old problem has taken on new importance and new angles.

Today, radio, and more recently TV, is bringing blow-by-blow descriptions of fire fighting operations right into the family living room. Never before was there the opportunity for developing favorable public (and press) relations through the medium of audio and video on-the-fire-ground contacts; by the same token, never before was the risk of "a bad press" and poor public relations so possible.

How far should a fire department go in releasing information on fire fighting operations, and, more particularly, on matters of policy in administering and operating the department? Who should be responsible? Who should be censor, if one is needed. And who should provide the contact between press, radio and the department? Also, what about the legal questions involved in disseminating such information.

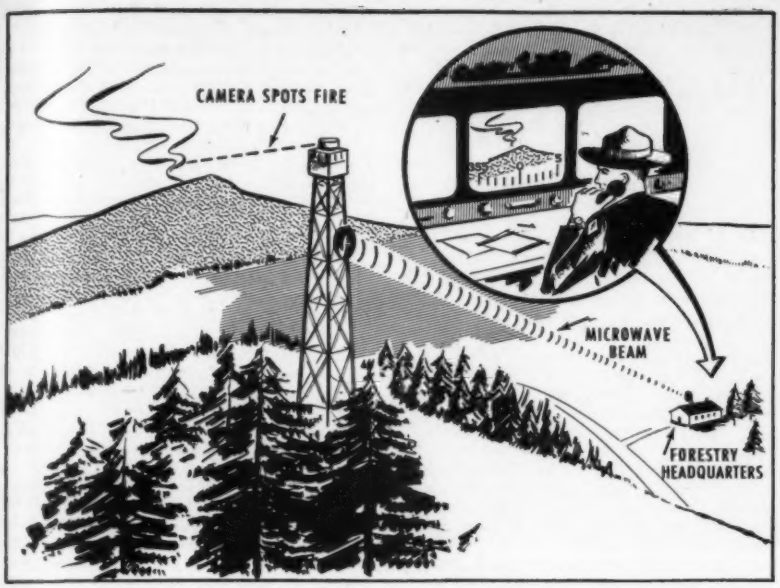
These and numerous other related questions are being answered in different ways, by different fire departments and fire chiefs.

In no other city is this question of "meet the press" so painfully poignant as in New York. It would seem that the bigger the department, the greater the headache. Certainly New York has, down the years, tried out nearly every kind of solution to the problem, from the strictest of news censorship in which releases could only come from the topmost echelon (and very few of these) to the broadest of open-door policies where anybody could talk about anything to any one at any time.

It is a foregone conclusion that every fire department and every fire chief wants favorable publicity. It is also true that fire fighting and the administration of fire departments is news. The question is how to gain these assets without painful reactions.

Orders recently issued by Fire Commissioner Edward F. Cavanagh, Jr. to the New York Fire Department shed some interesting light on the matter.

(*Continued on page* 700)



Rotating TV camera spots fire and beams the picture, via microwave, to headquarters. Two or more unattended towers can obtain cross-bearings and pinpoint the blaze.

"Electronic Fire Watcher" Guards Forests

The eye of TV is now to be used to protect the national forest preserves.

"Electronic Firewatchers," mounted on lonely lookout towers deep in the forests, relay television pictures of the surrounding areas back to forest headquarters, where the rangers can spot fires as soon as they start. The device was demonstrated recently by Raytheon Manufacturing Company at a convention of the Forestry Conservation Communications Association at the Fort Sumter Hotel, Charleston, S. C.

The equipment works without the use of wires or cables. A microwave beam carries the picture from the TV camera in each lookout tower, across miles of rugged timberlands, lakes and mountains, to the forest headquarters. There, a series of television screens ("monitors") shows the observers the scenes picked up by the cameras. The cameras rotate continuously, but may be stopped, started, or reversed by remote control, again through the use of a microwave beam.

As each camera rotates, it records not only the forest scenery, but an azimuth scale on the glass dome. Thus, if a forest fire is spotted, the camera may be stopped with its lens trained on the fire, and the scale reading, or "bearing" may be noted. When bearings are obtained from two or more towers, the location of the fire may be pinpointed on a map by the simple process of triangulation.

Since the advent of television, forestry officials have predicted that the TV camera would eventually become an ally of the forest ranger, giving him an "all-seeing eye" to help keep watch over vast areas of wilderness. The limiting factor, however, has been the expense and impracticability of stringing miles of costly coaxial cable from the lookout towers to headquarters. Such cables would be subject to falling trees or branches, high winds, ice storms, and forest fires, themselves. The microwave link eliminates the need for wires.

The microwave link is a specialized version of a device originally designed for the television industry. It consists of suitcase-sized units which are attached to the TV camera in the field, allowing the camera crew to photograph such events as ball games, news events in the streets, and other on-the-spot scenes. A lightweight aluminum parabolic reflector or "dish," is mounted on a tripod, preferably on the roof of a nearby building, and is connected to the camera and KTR-unit in the street below. The link picks up both the sound and picture, and feeds both to the "dish," which beams them out on one waveband, simultaneously, to the receiving unit which may be located as far as 25 miles away. There, the sound and picture are separated electronically, and may be fed through a regular studio to the local broadcasting tower.

The entire microwave equipment is small and light enough for one man to carry, yet despite its portability, it can be used for permanent installations such as in the fire lookout tower. The pictures that it relays are clear, steady, and highly detailed—enough so that forestry men expect it to help catch poachers, firebugs, and other lawbreakers occasionally. The pictures are unaffected by atmospheric conditions or other forms of interference.

Efficient Rescue Work Reduces Toll at Dallas Store Collapse

Five persons lost their lives and six were injured in the collapse of an aged 3-story building at 1505-7 Elm Street, Dallas, Texas, at 6:40 P.M. on June 1, 1955. The collapsing structure, unoccupied at the time and being razed, crushed a smaller, occupied building at 1409 Elm containing a bar and music store. All but one of the victims were killed by the collapse; the fifth died in a hospital of injuries received in the crash.

The Dallas Fire Department bore the brunt of the rescue operations and search for victims directed by Fire Chief C. N. Penn, Deputy Chiefs A. B. Cody, and others; Battalion Chief W. H. Sharp; Chief Fire Dispatcher O. D. Miller, and Fire Marshal W. B. Burns. Nine fire companies and some 60 fire fighters, aided by emergency corpsmen, police and rescue squads, civil defense workers and volunteers, joined forces in the grim 6-hour struggle against time following the initial collapse. Preliminary confusion gave way to clock-work efficiency as the fire fighters and trained emergency forces took over the hazardous task of probing the ruins.

Rescue operations began at approximately 6:55 P.M., Wednesday, June 1. At 12:30 A.M. on June 2, a thankful shipping clerk, the last of the victims known to have been trapped inside the wreckage, was brought out after two hours of furious burrowing by firemen. The next day the fourth victim was recovered, but firemen were withdrawn because of the danger of further collapse while contractors were removing the rubble. The fifth fatality was that of a man who had been rescued from the wreckage critically injured.

The wreckage of the two structures (the 3-story building had been erected before the building laws went into effect in 1906), constituted a serious fire threat to downtown Dallas. Chief Penn and

Photo by Linwood J. Martin

Collapsed Dallas building after rescue operations had been about completed.

his officers maintained a strict fire watch over the ruins until contractors cleared them up.

A crowd of some 6,000 curiosity seekers kept police busy following the accident. From the first cave-in until about 9:00 P.M. Wednesday, officials had difficulty coordinating all the operations. Waiting ambulances, fire trucks and other vehicles at first caused traffic jams along Elm Street. A change in the deployment of these rigs cleared up the jams about 9:15. Five ambulances were kept on the scene for some time. Throughout the night-long operation, a fire captain stood on a 10-foot pile of debris to give directions by loudspeaker and to coordinate the work of those inside and outside the building. An emergency corps official stood by all night with a telephone relaying telephone requests from the crews inside.

Portable saws, hand saws, jacks, wire cutters and other tools were employed to cut away some of the wreckage. The victims were finally reached by firemen who burrowed through the wreckage, in most cases removing the debris a bit at a time.

At 12:32 A.M. Thursday, the last victim was taken out alive and was removed to the hospital. Fire Captain R. G. Russell, who had been directing operations at the spot, reported crews had to jack up heavy wreckage to reach the man, who ultimately recovered. At 2:15 A.M., a wrecking crew went to work on the debris. A truck driver fastened a cable from one wall to his truck, drove forward a few feet, and the wall came crashing down. Then, except for fire guard left, and a handful of curious, everybody went home.

Town Fire Gets Out of Hand When Water Supply Fails

Fire in a period of four hours tore through the business district of Bowling Green, Va., on Easter Sunday, destroying 25 places of business and leaving only a half dozen buildings undamaged. It caused property damage estimated at $750,000 and left the little community of 700 population without water, electric power or communications for some hours.

Bowling Green is located about 28 miles north of Richmond, on Route 301, which runs north and south through the community. The fire burned out a three-block area on both sides of the highway before fire fighters controlled it about dusk.

The blaze apparently started about 2:00 P.M. in a barn loaded with hay, situated in the rear of business structures. What started it is not known, but investigators reported boys were seen near the barn shortly before the fire.

From the blazing barn, the fire communicated to several frame out-buildings in which automobiles were stored, and from there to a row of garages near the Bowling Green Hotel. Firemen said it was at that point that the fire got out of control. This reportedly occurred when the community's water supply power system failed. About 25 automobiles in the buildings and parking areas were destroyed.

Within an hour the fire had jumped across the highway and extended eastward into structures on that side. Here it burned up to the Caroline County Courthouse and the nearby jail, from which prisoners were hurriedly evacuated. The fire then burned south to the Manns-Hoy Funeral Home where it was stopped.

From the Courthouse the flames swept a block east of the highway and spread southward across Milford street. Two buildings including the second oldest Masonic Lodge in Virginia, were burned to the ground on the south side of Milford. Here the fire was halted, but not until the side of the Funeral Home was charred.

The ruined buildings included (West of Route 301): A garage and showrooms; the Dorsey Building, housing a drug store, dentist's office, shoe shop and barber shop; a barber shop; a restaurant and two apartments upstairs; another restaurant and upstairs apartment; a large Five and Ten Cent store, and one apartment; a bank and lawyer's office; also (East of Route 301) a radio shop; real estate office; food shop and warehouse; a record shop; auto supply store; another barber shop; a garage and 12 cars parked in lot at rear; a style shop; restaurant; service store and two upstairs apartments; a hardware store; jewelry shop; the Caroline County Red Cross office, and a retail store. Also West of 301 and south of Milford street: the Masonic Lodge and a record shop, and a large inn and two upstairs apartments.

Most of the burned buildings were of frame construction, which had long been regarded as fire menaces. "A lot of us have been expecting this for a long time" said a town councilman, pointing out that the fire department had only recently recommended that something be done about the old buildings.

Firemen, under Fire Chief Craig Woodward, responded with all their equipment and might have been able to stem the spreading fire but the town's water tank ran dry early in the blaze. It was not until after the local and out-of-town aiding fire fighters were able to get water from a pond on the north side of town, after a portable gasoline power pump was secured, that they were able to bring appreciable quantities of water into play. Meanwhile the best possible use was made of booster tanks and bulldozers, the latter being employed to knock down small frame structures and trees that might have spread the fire by involvement.

Aid Quick in Coming

As soon as the seriousness of the situation was grasped, help from neighboring fire forces was enlisted. Engine Companies 2, 5 and 18, with six pieces of equipment under Fire Chief Finnegan of Richmond sped the 28 miles to Bowling Green to stiffen the defense, returning to their respective stations about 1:45 A.M. on Monday morning.

From 15 other communities came some 17 fire companies and 20 additional pieces of equipment. Places dispatching aid included Ashland, Doswell, Montpelier, Rockville and Hanover Courthouse in Caroline County; also volunteers from Hanover County; King George County; the Dover Pembroke Volunteer Fire Department from Goochland County; and volunteers from Tappanhannock and Fredericksburg Fire Departments; also eight rescue crews from Ashland and Henrico Counties rolled in.

A large detachment of soldiers from nearby Camp A. P. Hill moved into town and assisted fire fighters, and police to fight the fire and keep order. Extra state and other police also were brought to the scene. There was no panic and only three fire fighters were injured, none seriously, during the long battle.

At one point a bulldozer was brought into play to knock over a flaming shed a few yards from the funeral home. During the operation, firemen and soldiers sprayed a stream of water over the dozer and driver but the project had to be abandoned when the water stalled the dozer's engine.

A heavy brick wall on a bank building, together with firemen's efforts, finally halted the spread of flames before they

A raging fire, whipped by winds, virtually destroyed the business district of Bowling Green, Va., before firemen managed to bring it under control. The leaping flames destroyed an estimated nineteen buildings in a two-block area.

Eight lives were lost in this fire which involved stores and apartments at Saratoga Springs, N. Y.

extended into the town's residential area. Scores of families, however, rushed their belongings out onto the streets in the fear that their homes would go.

The use of the pond to replenish the town's water supply resulted in pollution of the municipal water system. Efforts were immediately made to repair the pumping system and purify the contaminated mains; meantime fresh water was brought into the community by Army trucks.

Kerosene Blamed for Fatal Fire

Eight persons, two adults and six children, perished in a fire which swept the Kearney Block on Caroline St., Saratoga Springs, N. Y., about 2:30 on the morning of April 12, 1955. Wiped out was the entire family of Mr. and Mrs. Gilbert Abeel and their five children—three sisters and two brothers—and a young guest who was spending the night with them in their third floor apartment in the old brick and frame building in the downtown section of the State's famous spa and racing community.

One of the 38 persons who made their way to safety from the blazing inferno, most of them in their nightclothes, was seriously burned. He was William Selby.

The cause of the fire, which brought immediate investigations, was undetermined. The holocaust recalled a similar tragedy in Amsterdam, N. Y., last Feb. 1, when 11 children and a father died in a blaze attributed to a faulty kerosene stove. The Saratoga Springs tragedy apparently started in the rear of the block-long structure, on one of the porches where kerosene is stored. Most of the tenants reportedly used this fuel for cooking and heating purposes and it was stored in drums on the wooden back porches.

All witnesses agree that the fire had a big start and had entered several of the apartments from the rear before firemen from the nearest fire station, only two blocks away, had gotten hose lines into operation.

The building, erected in 1883, is owned by three different persons and was badly run down, according to reports. It was occupied by business establishments on the first floor: The Shamrock Grill, Sigbee's Paint Store and the Reliable Furniture Co. The grill was not open at the time, but others in the neighborhood were and it is reported it was occupants of these grills who first noticed the fire.

The fire department received the first alarm by telephone at 2:30 a.m. from an unidentified person. According to Saratoga Springs Fire Chief George J. Kirkpatrick, a few minutes before the alarm came in, one piece of equipment had been sent to Hickey's Corners on what proved to be a false alarm.

Firemen, responding on the general alarm, raised their 85-foot aerial to the top of the middle section of the structure, while others raised ground ladders to reach the tenants who, by then, were streaming from the building or were at windows calling for help. Customers of the nearby grill, who had noticed the fire, aided in rousing many tenants of the ten apartments.

At first, firemen and police were given to understand that all occupants of the building had escaped and it was not until a recheck revealed the missing persons that it was feared they had burned. Fears were justified when, shortly before 8:00 a.m., firemen searching from the top of an aerial ladder discovered the first body. It was several hours before all the victims were recovered, most of them burned beyond recognition. The dead were Mr. and Mrs. Gilbert Abeel, their five children, Billy 3, Gilbert Jr. 6, Jane 8, Irene 10, and Ruth 13. The dead visitor was Garry LaRue, 10.

New Castle Holds Field Day

The New Castle County Firemen's Association, of Delaware, held its first Field Day on May 15, 1955, at Delaware Park race track. Sixteen county fire companies participated in the competitive fire fighting evolutions, which were witnessed by a crowd of 8,000 persons.

The hose, ladder and drafting evolutions began at 9:00 a.m., and were distinctive from the old-fashioned "tournament contests" in that each operation was based on actual fire department practices, using regulation fire equipment and apparatus.

Judging was done by officers of the Wilmington, Del., Bureau of Fire and staff of Maryland University's Fire College, all on a basis of correct procedure rather than mere time consumed.

The winning unit was the Elsmere Fire Co. No. 1 of Elsmere, Del., which received the New Castle Fire Fighter's Memorial Trophy. The three runners-up were the Christiana Fire Co., Hockessin Fire Company, and Five Points Fire Company.

Following the evolutions, which took about three hours, there were demonstrations of different fire fighting equipment and evolutions.

Participants and spectators were united in praising the showing which provided training for the volunteers and thrills aplenty for the onlookers.

Thanks. EDWARD M. HAWTHORNE, JR.

Delaware fire fighters perform hose and ladder evolution at Field Day Exercises.

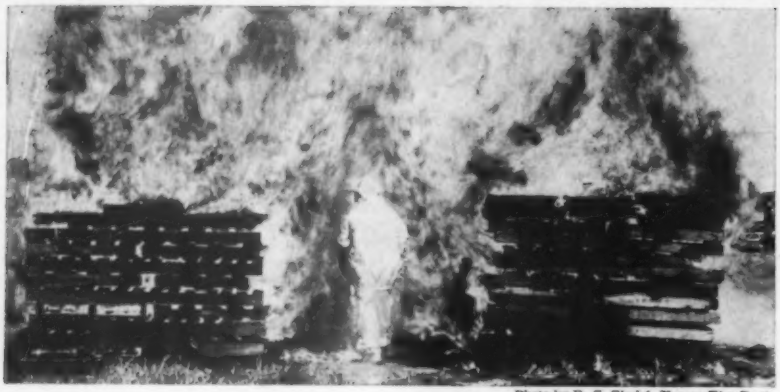


Photo by R. C. Zindel, Vernon Fire Dept.

Fireman enters torrid area at Vernon test.

Fire Department Tests Rescue Suit

On March 28, 1955, the Vernon Fire Department staged a fire to demonstrate the effectiveness of a new fire rescue suit. Two rows of wooden pallets were set up, leaving an aisleway four feet wide and 24 feet long. To obtain intense heat, the pallets were then drenched with 150 gallons of gasoline and set afire. A Minneapolis-Honeywell register with a maximum indication of 1600° F. was connected to a thermocouple set at one side of the aisle in the center of the fire area. When the fire was started, the indicator immediately went to the maximum of 1600° F. Doyle Farrier, Vernon Fire Department Instructor and a manufacturer's representative, wearing the rescue suits over self-contained gas masks, walked the length of the aisle through the flames, and returned. A thermometer worn underneath Farrier's suit registered a temperature which ranged between 98° and 100° F. throughout his stay in the flames.

A simulated rescue scene was staged on request for the Art Baker television show, "You Asked For It." A young lady was encased in a rescue bag and carried through the flames by two Vernon firemen wearing the rescue suits. Art Baker, also wearing a rescue suit, accompanied them.

In extensive tests made by the Vernon Fire Department prior to the March 28 demonstration, Chief L. C. Husted expressed the opinion that the equipment had come up to expectations. The results were satisfactory.

Five Fires in One Day Tax Las Vegas Dept.

Las Vegas, Nev., Fire Department had the busiest day in history on April 6 with five building fires, two of them major.

First of the major blazes occurred in the early morning of the 6th. At 4:57 a.m. L.V.F.D. received an alarm of a fire at Main and Hoover Sts. Engines 1 and 4, Truck 1, and Rescue 1 responded to find the entire structure housing a furniture store fully involved.

Forward lays could not be exercised on this fire due to hydrant layout and shortage of hydrants. It was necessary to lay lines to a hydrant two blocks away, although there was a hydrant only 80 feet from the structure.

Capt. Arthur R. Trelease reported this outlet could not be used until adequate protection for the pumper was secured. Engine 2 arrived and hooked up here and the aerial was raised to the roof of the exposure to the north and a 2½-in. line operated from it.

The building, a wood frame, metal-clad structure, 50 ft. x 75 ft. housing the furniture store and a barber shop was completely destroyed.

Firemen effectively prevented the fire from spreading to the south where a war surplus store was located.

A total of 3,450 ft. of 2½ In. and 3 in. hose, in addition to smaller amounts of 1½ in. lines, was laid.

Companies were released after working 3 hours and 35 minutes.

Three building fires of small consequence were controlled between the furniture alarm and 3:01 in the afternoon, when an alarm was received giving the address as the central building at the Moulin Rouge Hotel, under construction.

Engines 1, 3, and 4; Truck 1; Tanker 1, and Rescue 1 responded. Smoke was observed coming from the south end of one of the two-story units. The building was under construction and the gable ends of the roof were open.

Firemen were hampered by the usual construction obstacles, piles of lumber, sheetrock, equipment, forms, torn up grounds, etc. Access and egress of equipment was impossible on most sides of the building.

Tank 1 went into operation immediately with two 1½ in. lines from its 1000-gallon tank.

It was apparent that the entire attic was involved and the openings at either end were causing a very intense fire.

Engine 4 reversed one 2½-in. line on the south and Engine 3 reversed a 2½-in. from the tanker to Engine 4 and forwarded a 2½-in. line from Engine 4 to the northwest end of the building.

Engine 1 forwarded two 2½-in. lines from the south end of the building and east side. The truck was unable to gain access to the fire building so ground ladders were placed on the structure.

Capt. Trelease reported it was necessary to attack the fire from the top side due to the extent of spread and the need for a large amount of water fast.

The method of attack proved effective, said Capt. Trelease, but crews absorbed much punishment until the main body of built up heat and smoke could be knocked down. Ventilation was simple because the fire vented itself in several places very shortly after the equipment arrived.

Capt. Trelease listed factors contributing to the large loss on the fire as: area involved on arrival; vertical and horizontal openings feeding the attic; fire stops not complete; and shortage of manpower.

Cause was attributed to a pipe fitter's torch. Insulation wrapping was ignited and fire spread upward via plumbing chase (not fire stopped) into the attic where it mushroomed and spread very rapidly.

The building is approximately 50 ft. x 175 ft. in size, two stories high, concrete block exterior walls, wood joist ceiling with about a 1 on 3 pitch roof. Sheathing was ¾-in. plywood, roofing (still being applied) was hot mopped tar, two layers 30 lb. felt and rock. There were 40-50 rooms in the wing on fire.

A total of 3,550 ft. of 2½-in. and 950 ft. of 1½-in. hose was used. Five ⅝-in. fog nozzles were used, plus four 1-in. tipped nozzles.

Capt. Trelease reported that alarms, in general, are up in the booming desert community of 50,000. In 1954, L.V.F.D. answered an average of 71 alarms a month, but there were 60 in January, 1955; 90 in February, 83 in March, and 40 by April 15. —CLIFF DEKTAR.

Photo by Las Vegas Sun

Las Vegas firemen battle fire on roof of Moulin Rouge Hotel, April 6. Photo shows west side of building. Origin of fire was in first room from the right of picture on first floor. Entire roof ridge area unsafe due to extent of burn.

Westchester County (N. Y.) Pumpers, lined up in background, stage concerted effort to drain pond during search for boy who had disappeared. Police in foreground drag for body.

Mutual Aid Functions in Major Pumping Operation

Edwin Dilly, 15, son of an Ossining, N.Y., village trustee was the cause of an intensive search by police, firemen, boy scouts, school pupils and others in the Briarcliff-Ossining area of Westchester County in June, 1955.

Highlight of the hunt was the cooperative effort of volunteer firemen of five Westchester villages to drain a large pond containing over 3,000,000 gallons of water, in which it was believed the boy might have been drowned.

Fire Chief George Sullivan of Briarcliff Manor requested outside help of the County's Fire Control Center in White Plains to pump out the pond when dragging by police failed to find a body. Pumpers from the following responded to the call: Briarcliff Manor, Eng. 94; Ossining, Engs. 101, 148, 98; Croton, Eng. 118; North Tarrytown, Eng. 85; Tarrytown, Eng. 79.

Records of the pumping operation were as follows:

Pumpers	Time Started	Finished	Pump Press	Gas	Oil
BRIARCLIFF					
Eng. 94.....	12:36 P.M.	10.45 P.M.	20 Lbs.	60 Gals.	8 Qts.
OSSINING					
Eng. 101.....	1:00 P.M.	10:45 P.M.	50 Lbs.	75 Gals.	6 Qts.
Eng. 148.....	1:00 P.M.	10:45 P.M.	50 Lbs.	20 Gals.	1 Qt.
Eng. 98.....	1:00 P.M.	10:45 P.M.	40 Lbs.	45 Gals.	.....
CROTON					
Eng. 118.....	1:15 P.M.	10.45 P.M.	50 Lbs.	20 Gals.	2 Qts.
NO. TARRYTOWN					
Eng. 85.....	3:15 P.M.	10.45 P.M.	75 Lbs.	35 Gals.	1 Qt.
TARRYTOWN					
Eng. 79.....	5:10 P.M.	10.45 P.M.	.....	10 Gals.	.....

But this is not the entire story. With the coming of darkness, portable generators were requested and supplied by the departments of Briarcliff Manor, Ossining, Croton, North Tarrytown and Tarrytown.

During the operation, stand-by coverage was provided through the County Control Center. The Salvation Army and the Red Cross were at the scene with coffee, soup and sandwiches and the Salvation Army set up a large tent to shelter volunteer workers who had no rain clothes.

Communications were maintained during the operation both by fire and police mobile two-way radio and walkie-talkies.

Chief Sullivan reported that there was approximately 3,000,000 gallons of water in the pond which was originally the swimming pool of the Briarcliff Lodge, near which the missing boy was last seen. It was estimated that firemen pumped out 2,250,000 gallons of the pond's contents. Toward the end of the operation some pumpers found difficulty in getting proper suction because the water level had been so lowered.

Total pumping operations were 62 hours. Gas consumed was 260 gallons; oil used, 18 quarts.

Huge Fire Station Program for Los Angeles

The combined efforts of Los Angeles, Calif., firemen, who campaigned on their off-duty time, was credited with bringing about the passage of a $4,000,000 bond issue for 34 new stations and facilities over a six-year period.

The issue passed by a 6-to-1 majority at an off-year political election on May 31st, 1955. Nearly half of the proposed new stations will be constructed in the rapidly-growing San Fernando Valley area of the city with most of the others slated for other sections where rapid growth has outgrown fire defenses, said Chief Engineer John H. Alderson.

The firemen, on their own time spoke before PTA, business and service groups on behalf of the program. Moreover, they organized a door-to-door campaign, stressing the city's economic interest in maintaining Los Angeles' present Class 1 fire department rating.

The members also pooled their resources and bought automobile bumper strips urging citizens to vote yes on the proposition. Other printed material was purchased by firemen's organizations, such as the Relief Association, the Firemen's Credit Union and the Fire & Police Protective League.

The exceptionally large ratio by which the measure passed was in marked contrast to several other bond issues up before the voters, two of which failed. A 2-to-1 majority is necessary for passage of bond issues in Los Angeles.

The ratio is a further tribute to the efforts of the firemen by reason of the date of election — the day after the Memorial Day weekend. The timing, plus the voter apathy at the off-year election, made the firemen's job that much more difficult.

The city's registrar of voters, Benjamin S. Hite, predicted that inasmuch as there were no strongly controversial issues on the ballot, that the turnout would be only 25 per cent of the registered voters. Thanks to the efforts of the firemen, he said, some 37½ per cent of the registered voters turned up at the polls to vote.

The issue was, moreover, strongly supported by nearly all business and service groups, plus every metropolitan newspaper. PAUL DITZEL

Toledo Makes Progress

Toledo, Ohio, has experienced a sharp drop in fire losses for the year 1954. The cause is attributed to more contacts and inspections of not only places of public assembly, mercantile and other occupancies, but also to private dwellings.

The Toledo Fire Department has purchased in the past year several each of American LaFrance, and Peter Pirsch 1,000-gallon pumpers.

In December, Toledo received a General Motors squad truck which can transport, in addition to the regular squad equipment, a total of 13 men. However, at present only four men will be assigned to this unit.

FIRE ENGINEERING's correspondent reporting on the Toledo situation states that, all in all, 1954 was a good year for the Toledo firemen. They made a great record in the muscular dystrophy campaign and in other charity drives.

It is reported that during the year Toledo experienced only one fire where more than a single pumper actually had to "hook up" and pump water. That is something of a record for a city having a population of over 300,000.

"Junior Fire Fighters" Win Award

Kenneth Snyder, of Allentown, Pa., is 13 years old. He might be called a "Junior Buff"—in short, he loves fire fighting and fire fighters.

His particular pets are members of the Allentown Fire Department, Chief Walter J. Flores, commanding—and FIRE ENGINEERING magazine, which an understanding mother has subscribed to for him since he could understand what it was all about.

Kenneth and his pals, Eddie Roth, Jr., John Wagner, Jr., and Robert Diehl, all about his age and sharing his enthusiasm, contributed their part in the city's Fire Prevention Campaign; they also let it be known they were ready to go to work on any fresh young fire that happened to come along their way, with their home-made fire "engine."

Their interest and enthusiastic support won them the admiration of Chief Flores and his lads, not to speak of the local newspapers which wrote them up, but also, top award in the Fire Prevention Parade, staged in Allentown.

Chief Flores, in a message to FIRE ENGINEERING, writes, "Little did I realize that one of our townspeople, especially a mother and housewife, would be interested enough to mail your organization a newspaper clipping about the boys, their 'apparatus,' and the presentation."

Allentown's award-winning junior fire fighters.

Juniors Sell Corn for Polio

The Henrietta Township Fire Department, Francis Rightmyer, Chief, is an up-and-coming organization. Among its attributes is the Henrietta Junior Fire Fighters, a group of youngsters 12 to 18 years of age. They originally comprised a group of Explorer Scouts, but became interested in fire fighting, and promoting the interests of the local fire forces. Their activities include fire patrol in the schools, providing water for the department's high-pressure rig (using a pick-up truck and 40-quart milk cans), and assisting in the coffee-and-sandwich detail. According to the Chief, they also "polish the bright work." The most "junior" member is 7-year-old Dale Arntz who happens to be Chief Rightmyer's grandson.

Latest enterprise of the Henrietta Junior Fire Fighters was the drive "Corn for Polio." At 7:30 A.M. on Jan. 29, last, with the thermometer at 2 degrees below zero, the lads began collecting corn from farmers in the Township, which they sold, giving the proceeds to the 1955 March of Dimes.

A total of $185 was realized. The boys drove jeeps with trailers attached for the operation. At noon time lunch was served them at the fire station by the Chief's wife, the food itself coming from the families of other firemen. Altogether a cold job, but for a worthy cause.

Dick Harmon, a Polio victim and member of the Junior Firefighters, is shown receiving the check and passing it on to Arthur Dolan, Chairman for the 1955 March of Dimes in Jackson County, Mich. Also shown, from left to right, are Wendell Gee, Explorer Adviser; Mike Allen, Robert Cowing, Graydon Garfield, and Fire Chief Francis P. Rightmyer.

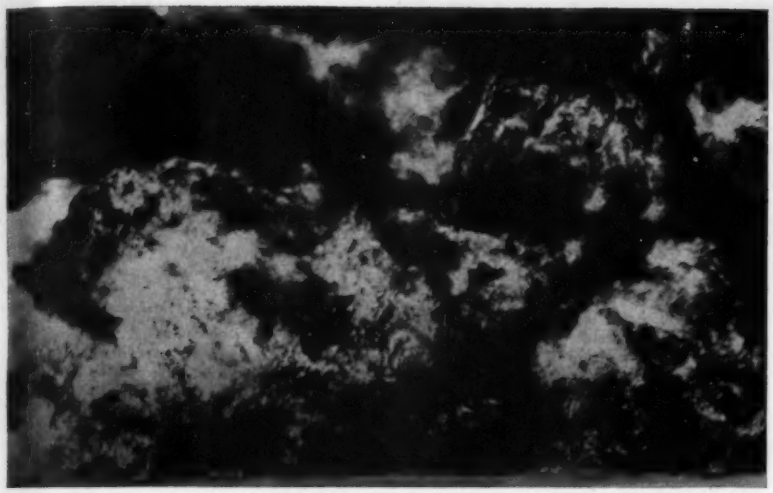
Chicago Installs Safety Belts on Fire Cars, Trucks

In July the Chicago Fire Department began the installation of safety belts on its cars and a fire truck to curb injuries and deaths among firemen in accidents.

According to Fire Commissioner Anthony J. Mullaney, about 1,400 of the safety devices will be installed on the department's 275 cars, ambulances and fire trucks at an estimated cost of $10 each, or about $14,000. The installation is scheduled to take about three months.

Commissioner Mullaney cited three deaths of fire fighters within the last year which he said probably would have been prevented by safety belts. One tillerman was thrown from a ladder truck and killed and two other firemen were killed when thrown while riding pumpers. A number of others were injured in such accidents, he said. One battalion chief was knocked out of a car and seriously hurt.

Already installations have started on 55 ladder trucks, the first units each to have three belts, for tillerman, driver and officer who rides beside the driver. Engineers are at work perfecting belt designs for the crew who ride the sides of the ladder trucks—six per vehicle, normally, but only three or four now because of shortage of manpower.



Only the front wheels of tractor-trailer show in this picture as flames envelop the rest of the vehicle. Two volunteer firemen were burned during fire fighting operations.

Beer Truck Fire Burns Volunteers

Two volunteer firemen were burned, and a tractor-trailer badly damaged, May 4, when the heavy vehicle caught fire on Route 20, about two miles west of Fredonia, N. Y.

The burns were incurred during attempts to extinguish a fire in the westbound truck, headed for Cleveland with a load of empty beer bottles. The vehicle apparently took fire from ignition of gasoline fumes resulting from spillage of the fuel on a hot exhaust pipe.

Driver of the truck pulled the burning vehicle to the shoulder of the highway and escaped the flames under the cab, without injury. The volunteer firemen, under Chief Claude Cornell, were injured when the gas tank exploded, showering the blazing fluid across the highway. Two other volunteers suffered less serious burns.

The truck cab was destroyed and extensive damage was done to the trailer and cargo.

In another truck fire shortly after noon the same day, near Sinclairville, firemen from that village were called, but the vehicle was almost totally destroyed before their arrival.

The accompanying illustration should be sufficient warning for fire fighters to treat truck, in fact, all vehicle fires, with respect and caution. Many fire fighters have been killed or injured on the highway because of failure to "play it safe" in attacking such fires.

CHIEF G. H. LENHARD,
Corfu, N. Y.

Minneapolis Fights Simultaneous Fires; St. Paul Aids

A fire, said to rank third or fourth in size in the city's history, raged through the north edge of Minneapolis' loop district, Friday, May 6, 1955, destroying or seriously damaging four large buildings, with property loss reported at $1½ million.

The swift-spreading blaze, for which five alarms were sounded, started about 4:45 p.m. from an unknown cause, reportedly on a loading dock at the vacant Ford-McNutt building, 211 No. Third St. It was discovered by employes of a parking service located diagonally across the street, who called firemen.

By the time the first company arrived from No. 4 Station, only a block away, the flames had spread through the four-story brick Ford-McNutt structure, leaped from windows and involved the east wall of the Duncan building, 309-315 Third Ave. N. The blaze then quickly spread to the 3-story Wholesale Tire and Supply; the 8-story Fur-Tex and 6-story W. S. Nott buildings on Second Ave. N. and Third St. N.

Within 20 minutes from discovery of the fire, fire fighters abandoned hope for the Ford-McNutt building and concentrated on preventing involvement of exposures. For a time it looked as though their efforts would fail as a strong, shifting wind sent flames licking nearby buildings, while embers and sparks were carried for a distance of ten blocks.

These burning embers set fire to at least five other buildings in the loop, causing fires which, however, were successfully fought by fast-working firemen, using aerial ladders. A half-dozen other fires were reported but were either extinguished by volunteers, or burned themselves out.

Chief Reynold C. Malmquist, who said it was the worst potential fire in his 30 years of service, attributed some of the firemen's success in gaining control of the conflagration to a reduction in the wind which, at the outset, reached gusts up to 40 miles an hour but continued to drop until, at 6:30 p.m., it was only 13 miles an hour, with no gusts.

The rapid spread and fierce heat of the blaze forced firemen to retreat from the Ford-McNutt Building and move several pieces of equipment, but a nearly new $40,000 aerial ladder was caught in the onrushing flames and later a falling wall, and wrecked. Two firemen who descended the ladder only a moment before the collapse were uninjured but with their mates were forced to leave the ladder to its fate. The falling debris spread across the street to damage a one-story annex of the H. D. Lee Co., overall manufacturers. Parked cars also were destroyed or damaged.

The fire broke out about 4:45 p.m. Off-duty firemen were called as additional alarms were sounded. With practically the entire fire force of the city engaged, four St. Paul companies came in on stand-by service. Two of these engine companies and a ladder unit

(*Continued on page 723*)

Minneapolis fire fighters wet down rubble of Ford-McNutt Building and strive to control fire in W. S. Nott structure.

The ROUND TABLE

For Practical Discussion of Current Fire Department and Fire Management Problems

TRAINING FIRE APPARATUS DRIVERS

THE discussion in this Round Table is a continuation of that which appeared in the March, April, May, June and July issues on training fire apparatus drivers.

The generous response from our readers made it necessary to carry the discussion over to this issue.

Readers are invited to send in their comments on this subject, or on next month's subject which is described in a box on a subsequent page. Address replies to Round Table Editor, FIRE ENGINEERING, 305 East 45th Street, New York 17, N. Y.

Discussion of the Topic

M. L. Butler, Chief, San Antonio, Tex.: Before driver training, the student receives 60 hours in fire service hydraulics as he will be needing this information for the course in driving.

1. All members assigned to the Training Division School for their basic training course, are required to have a state driver's license; this being the first step in driver experience before the student fireman is permitted to drive a vehicle.
2. The beginner, during his first six months of probationary service, receives 65 hours driver training and has to acquire a grade of 70% as a minimum.
   (a) Six men (average) are assigned to apparatus under the supervision of Training Division Instructor.
   (b) First two hours are of class room instruction on driving techniques, accident prevention, and apparatus maintainance. Traffic regulations—signals, etc. in city; state regulations—speed limits, etc. Regulations pertaining to responding to emergency call; and driving on city streets when not deemed an emergency.
   (c) Actual driving instructions in the field. The entire company of men accompany the apparatus, take turns in driving. The time allocated for this practical instruction depends upon the needs of each member.
   (d) Driver training also includes learning how to locate a pumper accurately for a hydrant hook up.
      (1) He is taught how to stretch hose lines and hook up;
      (2) How to operate the pump and supply hose lines with water;
      (3) He is required to make engine and nozzle pressure calculations in conjunction with driver training and pump operations.

   Up to this point, these operations have been conducted out in an outlying part of the city.
   (e) Then the men are brought to the training tower, where driver practice is combined with pump operations and hose evolution until he is certified by the Training Division to the Chief of the Department.
3. Selected to Drive.
   (a) Upon completion of all basic training, and when need arises for drivers and pump operators, company officers carry on a practice driving program with the candidate until declared competent for the apparatus in question. However, at this stage, these men come under the Engineer classification if previously classified and certified by the Civil Service Commission to the Chief of the Department. This is handled through competitive examinations.
   (b) Thereafter, company officers carry on regular driver practice and pump operations program on the company level.
   (c) When need arises, an instructor from the Training Division and from the Maintenance Division are called in to assist.
   (d) At certain intervals, a Training Division instructor goes out on a routine check up on driving and pump operations.
   (e) Also, the engineer receives further practice when called in to the training tower for pump operations and hose or ladder evolutions with his company.
   (f) Driver practice for ladder trucks are conducted by company officers and the Maintenance Division. This may be before or after certification as a driver or engineer. Drivers are sometimes transferred from one station to another which brings about a variance in procedures.
4. New Apparatus—Training of Personnel.
   (a) Definite instructional procedure is followed when new apparatus goes into active service or when older apparatus is transferred. The Maintenance Division is responsible for the development of standard operating and maintenance practices, in cooperation with the Training Division and the manufacturer.
5. Informational Material is provided chiefly from that published in the Factory Service Manuals.

John Hetrick, Mechanical and Safety Supervisor, Portland, Ore.: It had been the practice in this department in past years to select drivers on a seniority basis, or a man that was not physically able to carry on his regular fire fighting duties. On older equipment, and in an era when anyone who drove had to be somewhat of a mechanic by virtue of the vehicle's unreliability, this manner of selection was not too bad. However, with the advent of our larger and more complex equipment, and the leaning toward the automatic devices in passenger cars, it became evident that driver training and a more careful selection to get the best qualified personnel into these positions were going to have to be utilized.

We have one training company where new personnel undergo six months' comprehensive training. Two years ago we incorporated a driver training and equipment operation course into their curriculum. This will, as time goes on, greatly increase the proficiency of the drivers. However, this includes thirty-six men a year and it will be a number of years before the entire personnel of the department, 730 men, will have gone through this training course.

In our regular training drills, the entire department has had several three-hour drill periods devoted exclusively to a driver education course. The stress has not only been on accident prevention, but also correct operation of the equipment to get the most of its utility and how through that correct operation the cost to the city for keeping that piece of equipment in operation is going to be reduced. This program is paying off.

All drivers have been subjected to reaction, visual acuity and perception tests. We are fortunate to have available to us a vehicle equipped with these test instruments. Any new people selected by their captains as driver candidates must first meet the acceptable visual requirements. They are then given a written examination covering driving techniques, construction and operation of the equipment, problems on water streams and power ladder operation, laws governing use, etc. Actual operation of the equipment is next and a driving test completes the examination. The examinations are conducted by the mechanical supervisor and when the requirements have been met the man is certified as a driver engineer. This program will

(*Continued on page* 704)

HERE ARE THE QUESTIONS

1. **Do members of your fire department to be assigned as drivers of apparatus receive special training to quality them?**
2. **Of what does this special training consist?**
3. **What is the average time required to train a driver?**
4. **After they have completed the required period of training, are they subjected to further test to determine their fitness? If so, of what do the tests consist?**
5. **If no special training is given drivers, how are drivers selected?**

Short Cuts and Gadgets

NOW SYNTHETIC HANDLES FOR AXES?

This chemical and plastic age is having ever greater impact on the fire service.

Latest example to come to our attention is the application of synthetic axe handles.

Axe handles of plastic, reinforced with glass fibres, are said to be used by Canadian Army in the extreme cold of the northland. Wood, usually hickory, is the traditional axe handle material, but it isn't generally known that it shrinks in severely low temperatures.

Laminated birch was tried out to overcome the objection but it became brittle. So did rubber-and-plastic mixtures. Solid magnesium was too heavy, and hollow magnesium too light.

The glass-and-plastic combination doesn't warp, we're told, has no grain to split and won't break or chip if a tenderfoot whacks a tree with the handle instead of the blade. It has about the same weight as hickory.

Of course not every fire department operates in temperatures as frigid as those in Canada's northland, but regardless, maybe we'll see the day when wood will be discarded for axe handles, just as it is being replaced in ladders.

* * *

"COURTESY PROGRAM" BUILDS GOOD WILL

This comes from a California contributor who prefers to remain anonymous.

His contention is that members of a municipal fire department have many more opportunities for building good will for their city—and department, than they realize.

"Firemen are employes of the city," he writes, "and whether they like the term or not, are public servants. Unfortunately, too many of them consider service as something that applies to putting out fires alone. When not engaged in that occupation, they are quite willing to hide away from public gaze and contact, in their fire stations.

"Approached on the street, while in uniform," he continues, "by a passerby who may seek information, it isn't unusual for them to look bored and annoyed—and answer as though giving out information pained them.

"Nor is it uncommon for them to be unable to answer even some of the simplest queries about their city, its government, its people, and so on.

"Let me tell you how some cities in California do it—and by the way, you'll agree, won't you, that California has done about the best job of 'selling itself' to the world of any of our states.

"Oh I don't mean the usual 'make-toys-for-the-kids-at-Christmas time' and the willingness to parade apparatus on every occasion; I mean application of not just the fire fighters, but every fire house in the city, to a public good policy campaign—aimed not only at the local folks, but at visitors—particularly the latter, in fact.

"For example, in one city, the Fire Fighters Association, aided and abetted by the Chief, joined with the travel and other clubs of the area in a courtesy program. Every fire station was fully equipped with touring information as well as complete facts about the city they served. Outside each fire station was a neat but striking "target" sign in the shape of a circle inside of which was the outline of a fireman's badge. Across this in large letters was the word 'INFORMATION.' Above it were the words 'WELCOME VISITORS.' The message at the bottom of the badge invited people to ask the fire fighters of that house for any information they desired.

"Of course you can say that many cities don't have so many visitors, or that all fire houses are not along the main traveled routes. But that's no excuse for not putting forth some effort to make the fire stations civic 'Information Centers.'

"Yes—I know the answer to that one, too; many officers don't like to invite attention from the public. It brings people into their stations, may invite undesirable characters. They may get underfoot when the bell hits, and so on. There are plenty of objections that can be raised if a fellow wants to do it. But at the same time, there are a lot of advantages to it. At least they found it so out here on the Coast—starting over 20 years ago and they still keep it up, too."

* * *

GOT A SPARE WRENCH OR TWO?

Not so long ago a fire did $95,000 damage, all because firemen failed to have a hydrant wrench.

It's no joke! For some unexplained reason when they went to hook up and turn on the water there was no hydrant wrench handy, and they had to return to the station for one. By the time they got back, the fire was out of control.

Deponent saith not how come there were no tools in the apparatus kit that would have done the trick—but there weren't, and one fire department got a bitter lesson.

It should be obvious that a spare wrench or two may come in handy. They have been known to break when used in haste on a stubborn hydrant. They're usually needed for the second line. And if you're a part of a mutual aid set-up, be sure your wrenches fit your neighbors' hydrants (and the neighboring department's wrenches fit **your** plugs). Thanks "Embers" for the idea.

* * *

AXIOM FOR GOOD PUBLIC RELATIONS

The Minneapolis Fire Department, Chief Reynold Malmquist, is noted for its excellent good-will-building programs.

The following expression, taken from a little envelope enclosure distributed to all members of its Fire Department (and to registrants at the F.D.I.C., Memphis) is worth quoting—and perhaps passing along to your F.D. personnel.

"A fire department may spread itself over the whole world . . . may employ one hundred thousand men . . . *yet the average person will form his judgment of the fire department through his contact with one individual.*

"If this person is rude or inefficient, it will require a lot of courtesy and efficiency to overcome the bad impression.

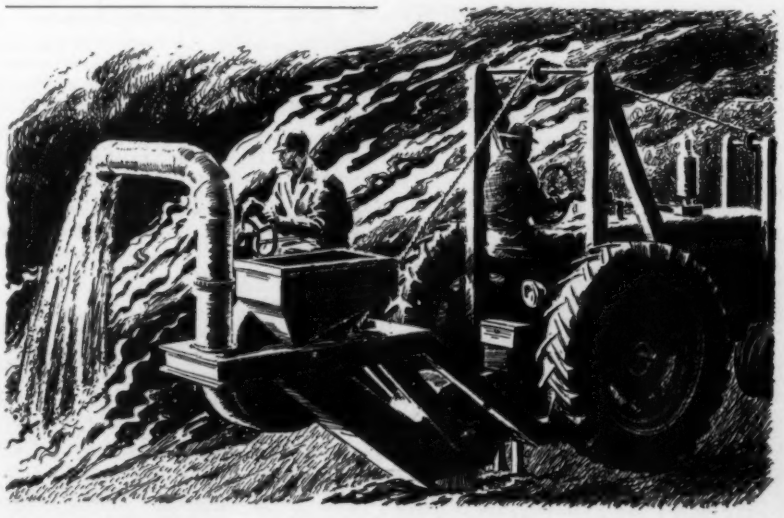
"Every member of an organization, who, in any capacity, comes in contact with the public, is a salesman . . . the impression he makes is an advertisement, *good or bad.*"

* * *

DIRT BLOWER TO SMOTHER FIRES

This one is adapted from *Popular Science* of January, 1952, and is based upon a patent issued to J. Hurlburt, Dishman, Wash. The inventor's idea is that when you're fighting fires out in the fields, there isn't likelihood of available water but there is usually plenty of dirt. Towed by a tractor, the machine pictured herewith, would pick up the earth on one side with a plowlike scoop, then feed it into a hopper. On the other side a gasoline-driven blower would spray the dirt out of a hose to smother the flames.

The use of dirt as an extinguishing, or at least a "confining" agent is old as the hills. But it's the first time we've heard about its being blown on the fire.



News of the Manufacturers

Circul-Air Introduces New Fire Hose Washer-Drainer

A new type of hose washer, designed to eliminate most of the arduous work of cleaning hose is announced by Circul-Air Corp., originators of electric hose dryers.

The device, called "Roto-Jet," has two compartments; the rolled-up length of hose is set in the immersion tank, from which one coupling is threaded between 4 power-driven nylon brushes, thence through a set of neoprene wringer rolls in the rinsing compartment. The hose passes smoothly between the brushes and rolls. The latter move the hose at approximately 20 ft. per minute, squeeze the excess water from the jacket, and drain the rubber lining, preparing it for drying.

New Circul-Air hose washer-drainer.

The hose is scrubbed by four long-bristle nylon brushes, so that even the edges as well as flat surfaces are treated. Two spray nozzles rinse the hose with clean water as it passes through the rinsing tank, flushing away dirty matter, soap or detergents, if they are used.

The manufacturers claim this device to be nearly automatic as a hose washer can be. Complete information on the new product as well as the company's "Model A-Z" washer previously introduced and described in these pages, together with hose dryers, turn-tables and hose storage racks may be had by writing Circul-Air Corp., 575 E. Milwaukee Ave., Detroit 2, Mich.

Textron Takes Over Homelite

Royal Little, Chairman of the Board of Textron American, Inc., announced on July 9 the purchase of the Homelite Corporation of Port Chester, New York, manufacturers of chain saws, generators, blowers and pumps, serving the fields of fire protection, agriculture, utilities, municipalities and industries in the construction, lumber, pulp and paper fields.

The Homelite Corporation was established in 1927 and was the pioneer in the design and manufacture of light weight two-cycle gasoline driven equipment for the construction industry.

The officers of the company are: J. A. Abbott, President; Nelson Thompson, Vice President, Sales; R. C. McDonald, Vice President, Manufacturing; A. K. Newman, Vice President, Engineering, and DeHaven Ross, Secretary and Treasurer.

Homelite Corporation will be an independently operated subsidiary of Textron American, Inc. without change in management, personnel or policy.

New Aluminized Fire Suit

A new aluminized fire suit has been announced by Wheeler Protective Apparel, Inc., of Chicago. It incorporates an air demand type respirator which enables the worker to breathe for extended periods of time while inside the suit.

The new suit, called the Wheeler "Fire Ring," is made from aluminized tropic-weight asbestos fabric which reflects up to 90% of the heat generated in the fire. The lining of the suit is of neoprene coated fiberglas for additional resistance to heat, abrasion, water, oil, grease and acids. There is a built-in Bullard hard hat to protect the wearer from head blows. A pyrex vision piece in the helmet is replaceable and is ventilated to prevent fogging.

The breathing equipment is a part of the complete suit. It is worn underneath the suit and provides enough air for approximately 15 minutes work inside the suit at extreme exertion.

Federal Advances Guschke

Albert T. Guschke, a 27-year veteran with Federal Sign and Signal Corporation, has been named Superintendent of Plant Operations for the company's main plant in Chicago, it was announced recently by William W. Scott, President.

Guschke, who started with the company as a sheet metal apprentice in 1928, formerly was assistant to the Factory Superintendent Robert Duncan, deceased.

He will be responsible for all manufacturing operations in the nation's largest plant facility, producing electric outdoor signs and visual and audible warning signals.

Ford Issues Apparatus Booklet

"How to Select the Right Fire Engine and Equipment For Your Fire Fighting Needs" is the title of a new booklet issued by Ford Division of Ford Motor Company.

The booklet is 12 pages, in color; it pictures and describes fire apparatus and emergency vehicles which incorporate Ford chassis, suitable for metropolitan, suburban and rural areas.

Inquiries should be addressed to Ford Division of Ford Motor Company, Dearborn, Mich.

New Fire Extinguisher Tubing

Fire extingusher service companies, manufacturers of fire extinguishers and large industrial plants with large numbers of first aid fire extinguishers of the water, soda-acid and foam types will be interested in the new fire extinguisher tubing announced by the Thermoid Company of Trenton, N. J.

The new hose is manufactured to meet Underwriters' Laboratory Specifications of 400 psi for five minutes. It is available in black or red, ⅜" ID, 11/16" OD, with one braid of reinforcement. For convenience in stocking, the hose is packaged in lengths cut to specifications at the factory such as the often-used 14½", 15½" and 24" lengths. The hose weighs 14 lb. per 100 feet.

Burdick to Direct Blitz Buggy

Announcement has been made of dissolution of partnership of P. E. Hurley and Philip W. Burdick, doing business as the Blitz Buggy Company. The business will henceforth be conducted by Mr. Burdick under the name Blitz Buggy Company, address, Old Forge, N. Y.

Fire Fighting Trailer

Henry H. Paris Distributor, Inc., Houston, Texas, has recently placed on the market a self-contained fire fighting trailer.

The steel body of the trailer which is 4'x8'x18", carries 360 gallons of water. It has 4 wheels, mounted on 2 level load axles to provide knee-action and smooth traveling. The low center of gravity provides against overturning even at high speed on sharp turns.

Self-contained fire fighting trailer.

The top sides and fenders are made with steel floor plate. Mounted atop the trailer body are a high pressure pump, hose reel, 100 ft. of 1" high pressure hose, 150-lb. dry chemical tank with 50 ft. of hose, 30 lb. hand extinguisher, valves and all controls. Thirty feet of 2½" suction hose is carried in a special compartment at the rear of the trailer.

The valve and piping arrangement is such that in addition to pumping water from the trailer tank, water can be picked up from a pond, reservoir, roadside ditch, stream, etc., or directly from a fire hydrant. Water can also be taken from these sources to refill the tank.

The pump used is a Gorman-Rupp exhaust-priming unit. The dry chemical tank is pivot mounted so that it can be raised to an upright position, and latched in place, for refilling.

The trailer is equipped with electric brakes, rear and side lights, quick latching safety hitch and steel plate fenders

New Notifier Products

Notifier Manufacturing Company of Lincoln, Nebraska, has announced a new line of Underwriters' and Factory Mutual listed automatic sprinkler supervisory systems utilizing Notifier's fully automatic auxiliary and proprietory type control panels. These systems are designed to give supervision of all com-

(*Continued on page 722*)

Double Shut-Off!

Easy to Turn Under Pressure!

AKR-O-JET®

FOG NOZZLE

PERFORMANCE DATA							
		60° Fog		30° Fog		Straight Stream	
STYLE	P.S.I.	G.P.M.	Reach	G.P.M.	Reach	G.P.M.	Reach
1201 1"	125	32	13 ft.	28	23 ft.	24	75 ft.
1212 1½"	100	110	18 ft.	90	30 ft.	75	100 ft.
1221 2½"	90	175	28 ft.	170	40 ft.	143	130 ft.

FEATURES

- **DOUBLE SHUT-OFF** Opens from shut-off directly into fog or straight stream. Reduce water damage by opening nozzle directly to fog.
- **EASE OF OPERATION** All degrees of fog, straight stream, or shut-off are instantly available. Akr-O-Jet Design makes adjustment easy at all pressures.
- **SOLID FOG CONE** Teeth chew water into solid fog cone.
- **DURABLE** Tough, rugged construction provides years of trouble-free service.
- **POSITIVE GRIP** Rib-grip for sure-grip.
- **SMALL STREAM** For washdown.

3/4"—1", 1-1/2" and 2-1/2" sizes

AKRON BRASS

FIRE FIGHTING EQUIPMENT

AKRON BRASS MFG. COMPANY, INC.
Wooster, Ohio

FALSE ALARMS

Tragedy

There was a man who fancied
By driving good and fast
He'd get across the railroad track
Before the train came past.
He'd miss the engine by an inch;
He'd make the train crew sore.
There was a man who fancied this
But there isn't any more.

A young woman was having her dreams analyzed by a psychiatrist. One day she told him she hadn't dreamed the night before.

"Young woman," snapped the doctor, "I can't help you if you don't do your homework."

Dickie's mother took him to his first movie. After watching the picture for a while, she noticed he was chewing gum. She whispered, "Dickie, where did you get the gum?"

"On my seat, Mother. Didn't you get yours?"

Professor: "What is a skeleton?"
Student: "A stack of bones with all the people scraped off."

A pink elephant is a beast of bourbon.

You've reached middle age when a night out is followed by a day in.

Women can keep a secret just as well as men, but it usually takes more of them to do it.

Judge to jury: "Are there any questions before you retire to consider the evidence?"

Juror: "Your honor, a couple of us would like to know if the defendant cooks that malt more than two hours and how he separates the yeast?"

Little Niles

"Willie," said teacher, "can you name the principal river of Egypt?"

"It's the Nile, ma'am."

"That's right. Now can you tell me the names of some of the smaller tributaries?"

Willie hesitated, then smiled, "The juveniles!"

And there's the touching story of a young man who said to his girl: "I bet you wouldn't marry me!" The story goes that she not only called his bet but raised him five.

Suffering

The woman lecturer was going strong. "Yes," she cried, "women have suffered in a thousand ways."

She paused for effect.

"I can think of one way in which they have not suffered and never will," murmured a meek little man in the front row.

The lecturer fixed an unbelieving eye on him. "What way is that?" she demanded.

"They have never suffered in silence."

A committee is composed of three people, two of whom pat the third man on the back.

Sign in Chinese-American laundry window: "Send laundry here. We no tear with big machinery. We do carefully by hand."

Sam: "My girl friend nags me constantly, is very untidy, and doesn't understand me."

Joe: "Really? When did you meet this other woman?"

Cause for Combat

"You have been charged with fighting. What is your explanation?"

"Well, your Honor," said the defendant, "It was like this. I was in a phone booth talking to my girl when this guy comes up and wants to use the phone. He opens the door, grabs me by the neck and tosses me out on my ear."

"Then you got angry?" asked the judge.

"Yes, a little," answered the man. "But I didn't get real mad until he grabbed my girl and threw her out, too."

It was rush hour, and the subway car was jammed. A big blond giant of a man, hanging carelessly on a strap, lost his balance when the car jerked, landing squarely in a forbidding woman's lap. Before he could apologize she blurted indignantly, "You! You big Swede!"

"Lady, I'm not a Swede," he replied calmly. "I'm a Laplander."

The height of devotion was shown by a flagpole sitter when his wife died. Out of respect for her memory, he lowered himself to half mast.

He: "Please!"
She: "No!"
He: "Just this once!"
She: "No, I said."
He: "Aw, Ma, all the rest of the kids are going barefooted."

An employer, interviewing an applicant, remarked: "You ask high wages for a man with no experience."

"Well," the prospect replied, "it's so much harder work when you don't know anything about it."

Doc: "I can't quite diagnose your case. I think it must be drink."

Old Soak: "All right, Doctor, I'll come back when you're sober."

"I guess the smoke got him!"

Save Money with **HOMELITE** Pumps

Here is the simplest, lowest cost way to dewater flooded areas.

One man lifts a Homelite Pump off your truck and carries it to any spot you need it. Quick starting . . . and with the fastest possible self-priming . . . that Homelite gasoline-engine-driven pump will handle water, thick with solids, at the rate of 15,000 gallons per hour. It will do your pumping fast . . . and without tying up man power and vital high-cost equipment.

Why not, right now, write for our new fire department bulletin and see how Homelite Pumps, Generators, and Chain Saws are saving money for fire departments in many other ways.

Manufacturers of Homelite
Carryable Pumps • Generators
Blowers • Chain Saws

PERFORMANCE · DEPENDABILITY · SERVICE

HOMELITE
CORPORATION
308 RIVERDALE AVENUE • PORT CHESTER, N. Y.

Canadian Distributors: Terry Machinery Co., Ltd., Toronto, Montreal, Vancouver, Ottawa.

Public Relations

(*Continued from page 686*)

Under the new dictum, authority is now held by the commanding officer of any rank, while in charge of operations at a fire, to give to newsmen factual information concerning the fire or any unusual incident in relation to the fire, accident or other emergency.

Chief officers in command at incidents shall now establish field headquarters at the scene, which location shall be identified by a flag by day and a red lamp by night. This "HQ" shall be the point of dissemination of pertinent information to newsmen and photographers.

This marks a definite revision of the old rules and regulations. Another revision, and a bit of an innovation, is the provision made that in the event no newsmen are present, and a newsworthy situation develops, the officer in charge, or any other officer in command at the time (even an acting lieutenant), is authorized to give facts and circumstances to reporters, or to The Fire Telegraph Dispatcher for relay to the Press Desk in the Manhattan Central Communications Office in Central Park.

It was one thing to establish this policy, and another to "sell" the idea to the members of the department. To do this, Fire Commissioner Cavanagh directed Assistant Chief Edward Connors, in charge of Administration and Personnel, to designate someone in the Speaker's Bureau of the Department to tour every fire fighting Division and every Communications Central Office, to talk to chiefs, their aides and the dispatchers.

The first man so selected was Fireman Thomas McKeon (Ladder 45), presently assigned to Chief Connors' staff. Although possessing no newspaper background, Fireman McKeon has been adequately covering the divisions by battalions, speaking to groups and answering questions advanced by fire fighters. In this tour he has had the support of all chief officers.

Fireman McKeon points out to his subjects that the officers and members of the New York Fire Department, and the department itself, are entitled to adequate public recognition. He discusses such topics as human interest fire stories and pictures and, in this connection, he emphasizes the fact that there are certain stories newsmen should not print, and certain pictures photographers should not take.

Frequently these sessions, aided and abetted by the commanders of the division and/or battalion, develop into round tables, at which numerous other questions come up for discussion. Among these are the subjects of press credentials; treatment of suspicious fires; releasing fire loss estimates, etc.

It is perhaps too early to tell just how satisfactorily the Commissioner's new policy of contact with the press is going to work out. Meantime, the experiment will be watched with interest by all forward-thinking chiefs.

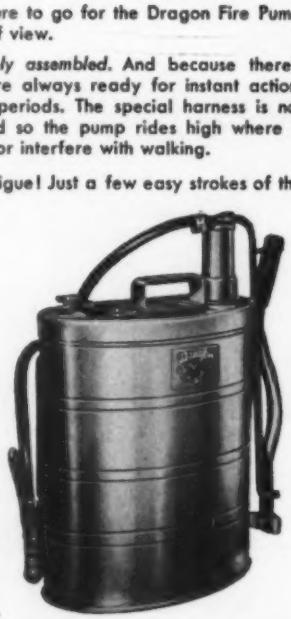
"I go for a DRAGON® FIRE PUMP every time!"

Give a fireman a choice and he's sure to go for the Dragon Fire Pump —the one designed from *his* point of view.

Dragon Fire Pumps come *completely assembled*. And because there's no pump packing to dry out, they're always ready for instant action, even after standing idle for long periods. The special harness is not only easy to get into, but designed so the pump rides high where it can't throw the fireman off balance or interfere with walking.

Dragon Fire Pumps fight fire *and* fatigue! Just a few easy strokes of the pump lever gives the operator a *continuous* flow of water he can direct right where it does the most good. And a mere twist of the shut-off nozzle gives either solid stream or spray *instantly*. What's more, a fireman using a Dragon Fire Pump can take his hands off both shut-off nozzle and pump lever to use rake, shovel, or other tool.

Specify Dragon Fire Pumps and get the pump designed with the *firefighter* in mind.



VALUABLE DISTRIBUTORSHIPS AVAILABLE, WRITE TODAY.

Dragon FIRE PUMPS

now available in 2 models

No. 150-S—Stainless Steel Tank

No. 150-G — Galvanized Tank: Cold-rolled steel, hot-dipped galvanized after fabrication.

All units equipped with brass pumps; all tanks seam welded. Capacity 5 gallons

DRAGON FIRE PUMPS meet Underwriters' Laboratories requirements and can be supplied with the UL label of inspection attached.

PARCO PRODUCTS COMPANY

PENNSBURG, PENNSYLVANIA

Firemen Aid at Train Wreck

Firemen at Bridgeport, Conn., played an important part in the rescue of several passengers aboard the Federal Express, which jumped the tracks in that city on July 14, killing the engineer, Arthur Orteneau, of New Haven, and causing injury to 23 passengers.

The Washington to Boston express was derailed while rounding a curve on Railroad avenue, said to be the sharpest on the New Haven Railroad. Bridgeport firemen responded to a telephone call at 4:43 A.M., three minutes after the wreck occurred, with several pieces of apparatus under command of Acting Chief Albert Schmidlin, and remained on the scene for several hours.

In the accompanying photo Edward Perkins, of Brooklyn, N. Y., a railroad porter, is being extricated on a stretcher by firemen through a window of a derailed passenger car. Perkins received injuries of the left leg and knee when he was trapped in the wreckage.

TOM MAGNER

Bridgeport, Conn., firemen aiding in rescue work at wreck of Federal Express in that city on July 14.

"See how easily it bends and coils when it is Multiple-Woven with DACRON filler cords!"

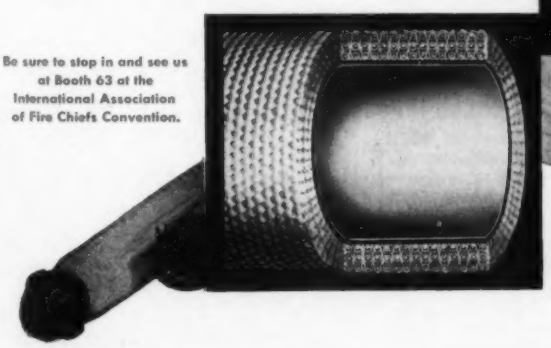
OF COURSE you can still buy *all-cotton* EUREKA MULTIPLE-WOVEN fire hose . . . but you'll be amazed at the approximately one-third *lighter weight, increased flexibility* and *greater strength* of this hose when it's woven with filler (circular) cords of DACRON*.

You still get all the benefits of EUREKA'S exclusive circular-multiple-woven jacket that cannot harbor water or dirt between its plies; its smooth-surfaced rubber lining that permits maximum nozzle pressure; the high abrasion-resistance of its outer cords of cotton warp yarn and all the other features that have made EUREKA MULTIPLE-WOVEN famous for its long life and long-range economy. In addition, DACRON filler cords give you a truly superior hose that is even easier and safer to use . . . lighter and faster to drain, coil and repack!

Whether you order all-cotton or DACRON construction, don't overlook the added satisfaction of buying your fire hose from a fire hose specialist!

Note how criss-crossing vertical cords tie all plies into a single jacket.

Be sure to stop in and see us at Booth 63 at the International Association of Fire Chiefs Convention.



*Du Pont's trade-mark for its polyester fiber.

"For greater protection to life and property"

EUREKA FIRE HOSE

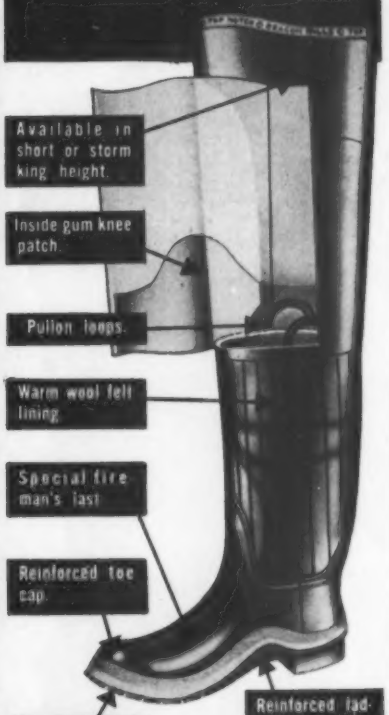
Since 1875, Specialists in Manufacturing Circular-Woven Rubber-Lined Fire Hose

195 Hudson Street • New York 13, New York

Division of United States Rubber Company

TOP NOTCH
SIREN
BEACON FALLS CONN.

SIREN
FIREMEN'S BOOTS


Available in short or storm king height.
Inside gum knee patch.
Pullon loops.
Warm wool felt lining.
Special fire man's last.
Reinforced toe cap.
Reinforced ladder shank.
Extra heavy super quality outsoles.

A NEW ADDITION . . .
COLDGUARD
SIREN

Built in plastic foam insulation over vamp and ankle for protection from extremely cold temperatures.

Sold only through authorized distributors

PRODUCTS OF
BEACON FALLS
RUBBER FOOTWEAR
BEACON FALLS, CONN.

The WATCH DESK

Overhauling the firemanic news of the day

by ROI B. WOOLLEY

"A Little Learning" Can Be a Dangerous Thing

Just to give an idea of what this chemical age has in store for its "students"—and its fire fighters, here are a few contributed items from the Faithful:

NEW BRUNSWICK, N. J.—Anthony J. Iannarone of Belleville, a Rutgers University student who lost his hands in a laboratory explosion at the university three years ago, won one of the Elihu Root-Samuel J. Tilden scholarships to New York University Law School.

Said to be the American equivalent of the English Rhodes scholarship, the award is valued at $6,600 and covers a three-year period.

Mr. Iannarone, then a member of the freshman class, lost his hands when a chemical mixture exploded. Notwithstanding his handicap, he wound up president of his class and on the Student Council, and with other honors.

SALT LAKE CITY, UTAH—Dr. Richard Young was telling his class on the atom and hydrogen bombs what the weapons would do. Just as he was emphasizing the tremendous explosive power of the two bombs, a window-shattering blast occurred, which rocked the lecture room.

The explosion, it was learned later, resulted from a freshman student's experiment in a chemistry lab' upstairs.

To the exits, men!

NEWTON, MASS.—Two students narrowly escaped injury when an explosion wrecked the interior of a reinforced concrete laboratory at Boston College. Damage was $25,000.

College authorities said the explosion occurred in a refrigerator where a chemical experiment was under way. The students were alone in the 30 x 50 ft. laboratory in the science building when the blast shattered equipment and set a fire. Luckily unharmed by the blast, the students braved thick fumes to fight the fire until gas-masked Newton and Boston fire fighters arrived.

MOSCOW, IDAHO—A University of Idaho freshman, blending a formula on his own, set off an explosion in the chemistry laboratory of the university. Six students were injured, one seriously.

The "frosh"—who shall go nameless, doing the experimenting, was the one worst hurt. He told an instructor that he was "just fooling around" while waiting for a crucible to heat. The instructor said the student mixed three solids: red phosphorus, potassium chlorate and manganese dioxide. Another university official termed the mixture "plain dynamite" and added "there was bound to be an explosion."

The blast was heard and felt in distant parts of the campus. It shattered equipment and left a cloud in the science hall.

CEDAR SPRINGS, MICH. — Mrs. Mary Weaver held up a large test tube before her eighth-grade science class and said, chuckling, "This may blow us sky high."

The tube, containing a mixture of potassium chlorate and manganese dioxide (where have we heard these names before?) exploded with a loud report, spraying teacher and pupils with fragments of glass.

Mrs. Weaver suffered 50 small cuts, and 27 boys in the chemistry room of Cedar Springs Junior High were injured. No fire.

* * *

Back to Julius Caesar

This'un comes from Bristol, home of Chief George Graham, past-president of the New England Association of Fire Chiefs.

It has us a bit "calendar confused." Shades of Nero, or do we have our centuries mixed?

At any rate, historically-minded Bristol firemen got quite a turn on June 26, last, when they received a hurry-up call from a resident out on Ambler Road.

Out zoomed Engine 2 to inspect the chimney of the distressed caller.

His name: Julius Caesar.

P.S. He was no fiddler. And there wasn't any fire, anyway!

* * *

Hot Off the Tape

In Rochester, Ind., Wayne T. Hittle sued a public utility firm for more than $84,000 on July 15 because his house exploded, so he said, when he threw a cigarette in his bathroom toilet. He charged the company with negligence in failure to inspect and repair a gas line in a subdivision in Rochester. Write your own caption. . . . Fire Chief Fred Tegler, of Narrowsburg, N. Y., was slightly embarrassed July 5, when he learned the facts about a pile of nearly 1,000 highly flammable paper "Davy Crockett" hats that were reposing in the firehouse after his appeal to youngsters to turn them in. The small fry turned in only 23. The rest had been bought by firemen for their annual celebration. . . . In Scarsdale, N. Y., so many persons are telephoning to hear recorded prayers-of-the-day that the phone lines have become jammed. In May last the Hitchcock Memorial Presbyterian Church set up a perpetual prayer system so that anyone calling a certain number would hear a one-minute prayer. But calls grew so numerous that a new deal will have to be made to prevent telephone tangles. Be just too bad if a tie-up would jam the fire phones (Scarsdale has no fire alarm boxes). . . . The Oakland, N. J., Volunteer Fire Company answered a call one night last June to fight a fire in a garage. One high pressure stream reportedly went right through the building and knocked a fireman unconscious on the other side. . . . The Crockett, Calif., Fire Department put the blame for starting a 20-acre brush and grass fire near Crockett on a jack rabbit. Firemen said the rabbit apparently dashed through a fire which a railroad construction crew had started along the right-of-way, caught its fur ablaze, and then raced through the dry grass field setting it afire from one end to the other. . . . Out Bloomfield, Ky.-way Mr. and Mrs. Charles Brewer's brooder house caught fire and it appeared that all their 100 chickens had perished. But

lo—when the blaze was extinguished and the door opened, out walked one surviving chick. . . . Evacuation of the Lake Michigan community of Montague, Mich., was averted when workmen managed to throttle a chlorine gas leak at a local electro-chemical plant. Pinkish clouds of gas rolling from a broken pipe led to a false report of fire in a liquefying vat half a mile from the city suburbs. City officials ordered the town evacuated but only 300 school children had been moved before the line was repaired. . . . Facilities of two Pittsfield, Mass., hospitals were taxed to the limit July 4th when 37 paraders of the ninth annual firemen's muster were felled by the heat. Hospital officials asked the vamps to postpone the remaining events of the day. . . . Dale Warner, 8, of Utica, N. Y., was injured severely by the explosion of a supposedly "dud" aerial bomb eight months ago. He recovered. Then, on June 4 last, a can of gasoline exploded burning him so badly that he died July 2. . . . A 54-year-old woman of Worrland, Wyo., committed suicide by drenching herself with a jar of gasoline and then setting fire to her clothes with a match. Then there's the case of the elderly widower of Penn Township, near Pittsburgh, who made a human torch of himself by dousing himself with gasoline and putting a match to it. . . . This'un is vouched for by the press but it stretches the imagination. Seems that in Denver, firemen thought they had come across a new type fire while battling a house blaze in the downtown area. "The fire laddies poured streams of water on a red glow in a bedroom for several minutes with no apparent results. They later discovered it was a bed lamp with a red shade." Now you tell one. . . . John Flynn, of Cambridge, Mass., doesn't believe that old adage about lightning never strikes twice in the same place. Lightning struck his house and tore a hole in his roof. A few minutes later a second bolt struck a power line leading to his attic and caused further damage to the house. . . . A two-year-old baby and two elderly women suffocated July 14 when fire swept through an old frame-and-brick building in Chicago that was to be torn down in a few weeks to make way for a new housing development. . . . Just to prove that some other folks never learn, on April 7 last, in Rochester, N. Y., Mrs. Ada Linton 69, died of burns suffered last March when her nightclothing caught fire as she was lighting a cigarette. . . . In Philadelphia, two firemen on their way to give aid in a suicide case with their rescue unit [Squad 10] were hurt in a collision. It was the fourth traffic accident involving fire department personnel in ten days. The vehicle came together with an automobile and upset, pinning the firemen in the cab until passersby righted it. Neither man was seriously injured. . . . In Decorah, Iowa, a 12-year-old boy who said he "likes to see the fire trucks go" has admitted setting nine fires in St. Benedict's Catholic Church in that city. . . . Mystery surrounds the drowning of William J. Ennis, 52, for 30 years supervising civilian dispatcher for the Queens Fire Alarm Headquarters, whose body was found July 9 in Jamaica Bay. He said "good-by" to his crew on July 5 and had not been seen since. A grand guy. . . . It is said each Canadian Balsam tree contains the fuel for its own funeral pyre. The resin under its bark, from which turpentine is derived, needs only lighting or some other spark to instantly envelop the tree in flames.

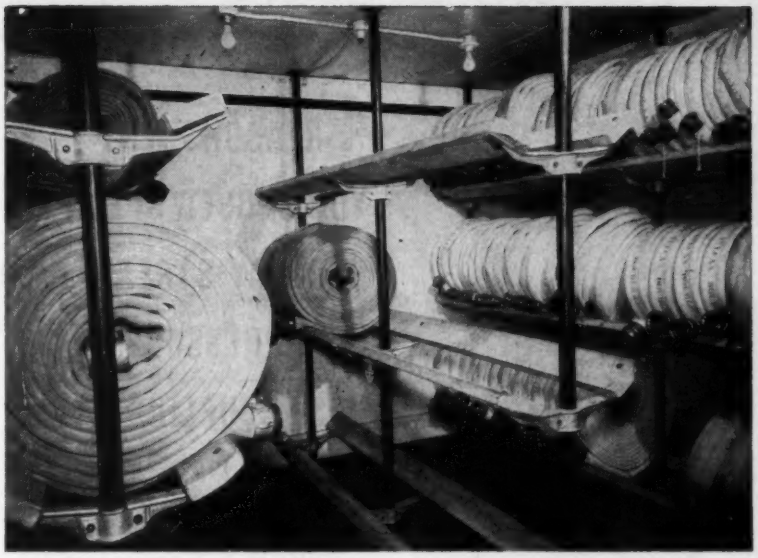
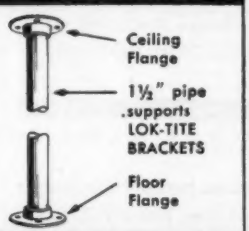


Photo Courtesy Wichita Fire Station No. 1

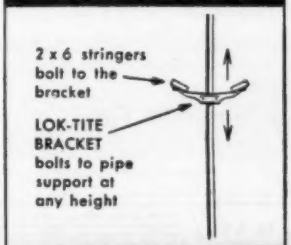
The Solution to Hose Storage Problems

FEATURES

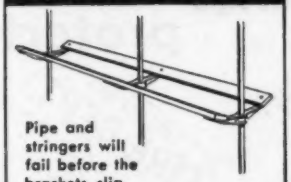
SIMPLE INSTALLATION



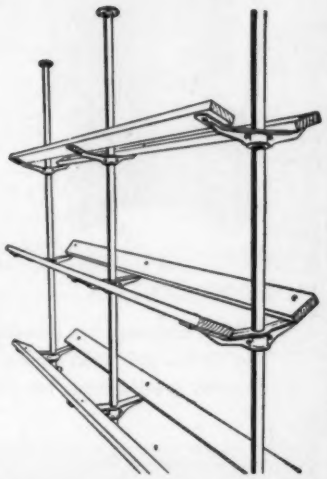
EASY ADJUSTMENT



BIG LOAD SUPPORT



Build Your Own Racks With Lok-Tite Brackets



MIGHTY few station houses have all the room they need for good housekeeping. Lok-Tite brackets help solve the hose storage problem by allowing ample ventilation and access in limited storage space.

Build your own racks with new or used materials. Design your own storage to take full advantage of the space available. Have ample room for fittings inspection and ventilation.

Lok-Tite brackets, light weight aluminum alloy, designed for strength and easy installation.

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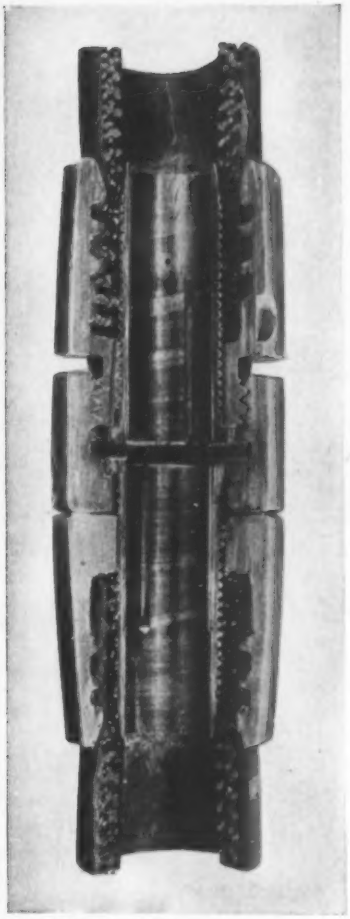

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see your dealer or write

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BOX 323 McMINNVILLE, OREGON

The Round Table

(*Continued from page 694*)

eventually provide us with very competent personnel.

The one deterrent is lack of incentive. The driver position carries no extra pay and for some highly qualified men the prestige of being the driver is not compensation for the additional responsibility. This is one of our problems to be worked out.

Thomas L. Godfrey, Chief Instructor, St. Louis, Mo.: Fire apparatus drivers in this department receive special training.

They receive instruction in actual road driving under competent instructors and become familiar with the hydrants in the district. They also must be able to spot engine at hydrants under adverse traffic conditions.

They receive training in pump operation. The theory of pumping is taught in our pump school, using actual activated cut-away models of the three types of pumps used in our department, namely, piston, rotary and centrifugal. Models of all the different types of pressure regulators are available for use as instruction material, as well as models of the different cooling devices.

The men must pump under varied conditions from draft and from hydrant, with one, two, three and four line lead-offs. Also included are such practices as pumping into siamesed lines, leading into ladder pipes on aerial ladders, into deck pipes on monitor wagons, relaying of water from one pump to another, etc.

Twenty-two hours of combined theory and actual practice are necessary before a driver is qualified. They repeat the above training under test conditions.

William Mattocks, Chief, Saint Paul, Minn.: To qualify as a regular driver, a fireman must serve as a relief driver for at least six months. No other testing is made.

Herbert F. Travers, Chief, Worcester, Mass.: We do not give a "defined" driver's course of instruction.

New drivers are gradually broken in by driving back from fires and traveling to points other than fires. This experience is given to all new men with the thought that all firemen should be ready to drive if needed. After a long term of part-time driving, the better qualified men of each company work into a regular berth.

During training classes our maintenance and repair men act as speakers to bring home to all personnel essentials of good handling and care of fire apparatus in quarters and out on the road. Road teaching is also our practice, where needed.

The gradual breaking-in process indicates who should be used as the regular driver.

Joseph F. Hancock, Chief, Indianapolis, Ind.: Frequent practice sessions at stations with the entire company participating soon indicate who is adapted for chauffeur work.

Examinations are periodically held for that rank and appointments are made on the basis of good grades and aptitude.

Charles Sensmeier, Chief, Evansville, Ind.: Prospective drivers are given two hours training per week for four

BOOKS

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Designed to serve as instructional material for firemen, particularly those attached to rescue squads, it is a gold-mine of practical, up-to-date, "how-to-do-it" information covering all phases of fire service activities relating to the saving of human life—first aid, manual and mechanical administration of artificial respiration, transportation of injured, use and care of rescue equipment, and rescue operations in general.

Fire Chiefs who realize the importance of developing their rescue work to top efficiency, as most fire departments are doing these days, would do well to place a copy of this book in the hands of each of their men concerned with this type of work.

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This book is without question the most complete, practical and authoritative material ever made available to the fire service on every phase of ladder use, handling and care. It is not only brimful of instructive illustrations but *each operation is fully explained* in easy-to-understand detail. The author is Assistant Editor of FIRE ENGINEERING, a former chief and a nationally recognized authority on fire fighting.

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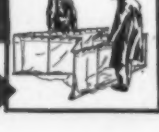

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HERE ARE THE QUESTIONS FOR THE NEXT ISSUE

1. **Are oil burner installation mechanics licensed in your city?**
2. **If not, do you believe they should be?**
3. **If licensed, who determines their fitness? Who issues the license?**
4. **If not licensed, who do you feel should do the examining and issuing of license?**
5. **What benefits do you believe accrue from licensing these mechanics?**

weeks. This training consists of pump operation.

After the training period is completed, the candidate must go through pump operations each morning.

H. D. Demonbreun, Chief, Nashville, Tenn.: We have relief drivers who take over when the assistant engineer or engineer is not on duty.

Any man who wants to drive is allowed to drive back from a fire. He does this until his officer thinks he can be turned loose to drive to fires. Then the superintendent of our repair shop takes him out and lets him drive and operate the engine or ladder truck. If he feels he is qualified, he is made a relief driver.

When we have a vacancy for engineers, we give an examination. All assistant engineers can take the exam. They drive and pump and are graded and then placed on a list, the one making the highest grade going at the top of the list. The same procedure holds when there is a vacancy for assistant engineer. The No. 1 relief driver is eligible to take this examination which is the same type as the one taken by the engineers.

All the men who drive fire department equipment are examined every twelve months. We find this procedure to be a good thing, since we have had some of our men die on duty from heart attacks.

Stephen P. Adley, Chief, Pittsburgh, Pa.: Regular driving instruction is given by the Director of Automotive Vehicles. As much as one week's time will be taken, especially if it is a newly purchased piece of equipment.

No special tests are given.

For the first time in the history of the department, the 1955 eligible list for appointment consists entirely of licensed drivers.

R. R. Gouldy, Chief, Chattanooga, Tenn.: Prospective drivers drive back from alarms that have been answered by the regular engineer. They also drive the apparatus to and from the training tower.

They report out of service from their station and go to a fire hydrant and hook up the engine and pump. They also practice spotting the fire engine for hook-ups.

It takes somewheres in the neighborhood of three to four months to train a fire apparatus driver.

The master mechanic will go with

the entire company to a fire hydrant or the river or stream where the driver to be is given a strict examination on how to hook up at a plug and pump the apparatus; how to draft water from a stream, pond or cistern; also how to handle and care for the apparatus; spot the engine at a fire plug and how to drive when laying fire hose from the bed of the engine.

If a driver proves capable he is approved by the master mechanic, who then will recommend him to the chief of the department.

J. K. Piercey, Chief, Salt Lake City, Utah: Prospective drivers are given very thorough training under the department equipment instructor, who in conjunction with the station officer qualifies them for driving assignments. Preparatory training is followed up with yearly training classes. The officer is charged with controlling and watching a driver's handling of equipment.

This training consists of proper driving procedures, traffic and safety rules, department rules, maintenance and care of equipment; also time necessary in actual driving with the instructor to teach and determine the driver's ability.

Two to three weeks in addition to regular turn at driving, plus a yearly refresher course, are required to train a driver.

Edgar M. Grass, Chief, Kansas City, Mo.: Members of this department assigned as drivers do receive special training. This includes the handling of apparatus, operation of pump, governor, change-over valve; study of fire department hydraulics, and care of apparatus.

It usually takes from six months to a year to train drivers.

Men must take a written test, a physical examination, a driving test and a pumping test. They are then placed on an eligibility list according to the grade made on this examination and then appointed from this list. These examinations are held and a new eligibility list made every two years or sooner, if needed.

H. J. Schmidt, Chief, Richmond, Cal.: Prospective apparatus drivers are given special training by the drill master in the operation of apparatus, including drafting and driving drills.

It takes at least two years to adequately train a driver.

After they have completed the required period of training, they are made assistant drivers and as such, drive back from fires, to and from shops, etc.

The men have to pass a regular examination to become engineers, which includes written and operating examinations.

R. Beaulieu, Chief, Quebec, P. Q.: Members to be trained as drivers receive theoretical training in pump operation, etc., and actual driving lessons that are given mainly upon return from an alarm. It takes a minimum of three weeks to train a driver, although more time is given, if necessary, according to the capacity to learn of the man concerned.

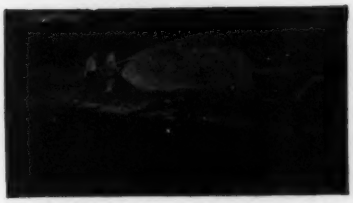
Every man has to submit to an examination sponsored by the Provincial Government which consists of an eye test, hearing test, reflex test, driving test, including hill stops in traffic, knowledge of traffic laws, etc.

Nip Brush Fires in the Bud with an FZZ

FIGHT FOREST, BRUSH & FIELD FIRES with a HALE FZZ

Above and at bottom are two on-the-spot pictures showing a HALE Type FZZ Portable Fire Pumping Unit fighting a brush fire from a moving truck. An FZZ can be mounted or carried on any type of equipment, making it a real "work-horse" for fighting brush, field and forest fires while in motion. Booster tank is used for a source of water.

The Hale Type FZZ is a powerful, sturdy, ready-to-use unit built specifically for fire fighting. Compact, dependable and efficient, it will stand long hours of continuous pumping.



Above—FZZ Pumping solid stream and fog.

Above—FZZ Relaying through Major Pumper.

Above—FZZ Pumping Foam (Foam proportioner built in if specified.)

Performance substantially exceeds NBFU and NFPA capacity and pressure requirements. It can supply from draft, two capable fire streams through 1½" hose lines.

Note: Discharge adapter can be supplied for use with 2½" hose.

Available in carrying frame; mounted on two wheels; or mounted on rubber-cushioned steel channels.

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CHARGING CURRENT WITH ENGINE IDLING At the fire, L-N Alternators produce up to 40 amps with engine idling, keep batteries "up", permit use of 2-way radio.

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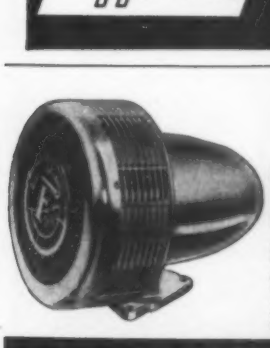

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Among the Buffs

By Paul C. Ditzel

MANY thanks to those of you who wrote flattering letters about various fire stories of mine which have been appearing in the men's magazines.

Another one, "She Came in on Her Belly," a story about the work of the Los Angeles Fire Department's airport fire-fighting crew, will appear in the October issue of Male Magazine.

Fire Chief Clarence C. Baal, Jr. of the Sherrill Fire Department, P.O. Durango 2, Iowa, says that he also read a story on the volunteer fire departments in a recent issue of Saga Magazine.

"Too bad there aren't more articles on this subject in the more popular magazines," Chief Baal laments. There's one good way for you buffs to remedy that and that's to write editors about what kind of stories you'd like to see in the magazines. I've never heard of an editor yet that didn't try his best to please readers if at all possible.

While researching another fire article I came across a fireman and buff, too, who goes to great lengths to obtain historical data on his beloved Pomona, Calif., Fire Department. He's Captain Andy Banks of the Pomona Headquarters Station who doubles as the department's public relations man. Andy is compiling a history of the Pomona department and says he'd like to hear from anyone who has such data. I learned that Andy once drove all the way to Santa Barbara, Calif., to pick up a postal card showing one of Pomona's first chemical rigs.

And for those of you who like to do your buffing by way of reading, I strongly recommend another new book to you. It's "Techniques of Arson Investigation," by Captain Raymond L. Straeter who heads the Los Angeles Fire Department's arson bureau. Captain Straeter is an internationally-known authority on arson and his book should be on every buff's bookshelf—and every chief's, too. For further information contact Captain Straeter at 7019 Bonsallo Avenue, Los Angeles 44, Calif. A knowledge of arson techniques would make any buff a good man for a harried fire chief to have around the fire ground.

Charles V. Gurka of 30 Canal St., North Side, Cohoes, N.Y., writes that one of Troy, N. Y.'s Box 17 Club members had been officially honored by that city which made him an honorary battalion chief. He is Raymond C. Henry, one of Troy's best known fire fans. This is the first time, says Charles, that Troy has promoted a buff to the title of honorary chief. Ray also is a member of the Fire Bell Club of New York City.

I touched recently upon the work of the Dallas Emergency Corps and its chief, William J. Wheless, Jr. This group is one of the liveliest groups I've come across in some time. In Texas, where everything is done in a big way, the corps has long distinguished itself for its unexcelled work.

The corps consists of public spirited men who volunteer their services under all sorts of emergency conditions. The first issue of their new publication, "This Month," reports that the corps made 7246 calls (fire, accident and other emer-

gency) between June, 1953, until May, 1955. The publication, an excellent one, is edited by J. Colon Bishop, and the corps makes its headquarters at 914 N. Central Expressway, Dallas. The corps was formed by a small group of citizens to assist police, fire and civil defense organization where needed and also to form a peacetime first aid and rescue squad fully equipped for anything.

The group operates its own dispatch system and each member must keep the dispatcher informed of his whereabouts at all times. Operations are financed by membership initiation fees and dues, plus contributions. Each corps member is thoroughly trained in first aid and cannot make a call until he has served 60 days probation and 120 days training periods riding with a qualified member. He also must carry an assortment of gear in his car that makes the uninitiated wonder where the driver finds room to sit.

The corps distinguished itself on June 1 when an old 3-story building collapsed in Dallas. Members hurried to the scene, the corps' rescue bus was set up as headquarters and oxygen and rescue equipment was brought into play. Firemen, Dallas Emergency Corps members and civil defense workers went to work as one team to remove victims from the collapsed building. Members even manned a telephone system used for communications purposes at the disaster scene. Three separate tunnels burrowed into the debris and rescue workers worked 'round the clock. Due to their excellent training, corps members and firemen rescued 10 persons alive. The four who were killed died instantly.

That's it until the bells go down again next month about this time. Incidentally, I gave the seltzer water-smoke poisoning antidote suggestion to the Pomona Fire Department which plans to try it out. Thanks to Baltimore's 414 Club for this one. Any more such ideas? Send them to me at 419 Napoleon Street, Playa del Rey, Calif.

I.A.F.C. Exhibits Now Total Seventy-One

The fire apparatus and equipment exhibit at the Omaha, Neb., conference of the International Association of Fire Chiefs promises to set a new record. In addition to the sixty-two exhibitors announced in the May issue of this journal, a supplementary list of nine additional has been received from Chief L. Clyde Canning, Midvale, Utah, Chairman of the Exhibit Committee. They are:

Adams Fire Equipment Company
V. H. Blackinton Company, Inc.
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Vice President to Speak at I.A.F.C.

The International Association of Fire Chiefs announces a special feature for the forthcoming Omaha Conference, September 19-22, in the person of Vice President Richard Nixon. He will address the conference Tuesday afternoon, September 20.

YESTERDAY...
Fires Were Fought by DEFENSE

1931... Firemen are shown battling a four-alarm fire of possible incendiary origin which destroyed a cooperage plant and warehouse in California early today, doing an estimated $100,000 damage and injuring two firemen. Great clouds of smoke and flame from the fiercely burning structure covered a quarter of a block. (Int. News Photo)

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PERFORMANCE DATA—No. 26 and No. 13 PUMPS

Pump No.	Pump Shaft R.P.M.	Pounds Pressure	Hose Length and Size	Dry Suction Lift in Feet	Vol. in Gal. Per Minute
26	1600	120	500'—1½"	20'	150
13	1600	120	500'—1½"	20'	75

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Questions and Answers

Layouts for Pumper Tests

To the Editor:

Are the proposed layouts listed below practical for a 1500 gallon pumper and a 1250 gallon pumper?

Test No. 1. (1500 GPM pumper) ½ rating; discharge, 750 GPM; 100 feet of 2½-inch hose equipped with 1¾-inch tip; nozzle pressure, 70 pounds; engine pressure, 200 pounds.

Test No. 2. (1500 GPM pumper) 33-1/3 rating; discharge, 500 GPM; 100 feet of 2½-inch hose, with 1½-inch tip; nozzle pressure, 58 pounds; engine pressure, 250 pounds.

Test No. 3. (1250 GPM pumper) ½ rating; discharge, 625 GPM; 200 feet of 2½-inch hose with 1¾-inch tip; nozzle pressure, 48 pounds; engine pressure, 200 pounds.

Test No. 4. (1250 GPM pumper) 33-1/3 rating; discharge, 417 GPM; 400 feet of 2½-inch hose with 1¼-inch tip; nozzle pressure, 85 pounds; engine pressure, 250 pounds.

W. P. H.

Answer: In the first place, it is desirable to avoid excessive velocities of flow in hose when running pumper tests. For this reason, the Underwriters' engineers, when they run tests on pumpers, usually use parallel lines to cut down the velocity of flow, if the discharge rate is high.

And now commenting upon the various layouts you suggest:

Test 1. You may not be able to get a discharge of 750 gallons per minute through a 1¾-inch nozzle with your layout at 200 pounds pump pressure. Your tolerance is too close. It is usually better to provide a layout which will give you a discharge at the nozzle well above what the specifications call for, when the pump is operating at the desired pressure. Then, to get the proper discharge, the discharge valve, or valves, feeding the line, or lines, are closed a little, or throttled. The layout we would suggest would be two parallel 100-foot lines of 2½-inch hose siamesed into a 1¾-inch deluge gun, and then throttle the discharge gates at pumper to build up the engine pressure to 200 pounds.

Test 2. This layout is satisfactory, but it will be necessary to throttle the discharge gate to build up the engine pressure to 250 pounds, when the pump is discharging 500 gallons per minute.

Test 3. Here we would use parallel lines of 2½-inch hose, each 100 feet long. These would be siamesed into a deluge gun, and equipped with a 1⅜-inch tip. While this layout would give you 700 gallons per minute at 200 pounds engine pressure, the discharge gates would be partially closed to reduce the discharge, and the engine operated to keep the pump at 200 pounds pressure.

Test 4. Here a single line of 2½-inch hose would be satisfactory as the flow is but 417 gallons per minute. Employ a 1¾-inch nozzle. Throttle the

discharge gate to give 250 pounds at the pump. The nozzle pressure will be in the neighborhood of 80 pounds when the pumper is giving the required discharge at 250 pounds engine pressure.

Incidentally, in Test No. 3, with your layout, a pump pressure of 200 pounds would probably not give 625 gallons per minute with a single line of 2½-inch hose fitted with a 1¾-inch tip. In Test No. 4, there is not sufficient tolerance. A ¼-inch tip on a 400-foot line of 2½-inch hose with 250 pounds engine pressure would probably not discharge the required 417 gallons per minute, depending upon the condition and age of hose. Again, a larger tolerance must be permitted between the discharge as provided by specifications and calculated discharge. The discharge is then brought down to the proper amount by throttling the discharge valve.

Pumps in Tandem and Relay

To the Editor:

A shanty 3,000 feet from the nearest hydrant (90 pounds gravity pressure) takes fire. Plenty of men and 2½-inch hose are available for the stretch, but only two standard size pumpers, a rotary gear and a piston-type.

Where would you place pumpers in tandem, between the fire and hydrant in order to get a 35-pound nozzle pressure, using a 1-inch tip? T.F.T.

Answer: Placement of engines in tandem, that is, engines placed side by side, and the discharge of one connected to the intake of the other, is rarely done. The hose at the discharge side of the second pumper would be subjected to the total pressure created by the two engines. If each pumper is operating at a high pressure, the total pressure at the discharge side might be more than the hose could withstand.

When centrifugal pumps are used in a tandem layout, practically all the pressure delivered by the first to the second engine is utilized by the second engine. Hence if each engine is creating 300 pounds pressure, the discharge pressure at the second engine would be in the neighborhood of 600 pounds.

Rotary and piston pumps do not utilize as much intake pressure as do centrifugal pumps. Hence, if two pumps of either of the latter two types are placed in tandem, and each is operated at 300 pounds pressure, the discharge pressure at the second engine would be appreciably less than 600 pounds.

Just what percentage of hydrant and engine pressure that can be utilized will depend upon factors which may vary with discharge and pressures involved.

In addition, pump number 1 must provide a little additional terminal pressure to overcome friction in connection between the two pumps and supply sufficient entry pressure into the second engine. Around 10 pounds is usually allowed for such friction loss and entry pressure.

To sum up, engine number 1 would not utilize all pressure from the hydrant; thus pressure less than 90 pounds would be transmitted through pump number 1.

Pressure created by pumper number

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2 plus pressure utilized from pump number 1, would not all be transmitted through pump number 2 to hose line. Hence higher pressures would be needed at both pumpers than those you have calculated.

These two pumpers can be used in relay, with satisfactory results. Normally, the rotary pump would be pumper number 1, placed at the hydrant, and pumper number 2, the piston pump, placed in the line.

The length of line from pumper number 1 to pumper number 2 would be 1700 feet and from pumper number 2 to the nozzle, 1300 feet.

We first solve for the pressure at pump number 2.

$$\begin{aligned} \text{E. P.} &= \text{N. P.} \times (1.1 + KL) \\ &= 35 \times (1.1 + .105 \times 26) \\ &= 35 \times 3.83 \\ &= 134 \text{ pounds} \end{aligned}$$

To solve for pressure at pumper number 1, we first find the friction loss between pumper number 1 and pumper number 2. The flow of water through the line connecting these two pumps is solved from the following formula:

$$\begin{aligned} \text{Flow} &= 29.7\ d^2 \times \sqrt{P} \\ &= 29.7 \times 1 \times 1 \times 5.916 \\ &= 175.8, \text{ or } 176 \text{ gallons per minute} \end{aligned}$$

The friction loss in 100 feet of 2½-inch hose carrying 176 gallons per minute equals $2 \times Q \times Q + Q$, where Q is the flow in hundreds of gallons per minute

$$\begin{aligned} &= 2 \times 1.76 \times 1.76 + 1.76 \\ &= 7.96 \text{ pounds} \end{aligned}$$

The friction loss in 1700 feet of hose will be 17 times as much, or 17×7.96, or 135 pounds.

Allowing 10 pounds inlet pressure to pumper number 2, the pressure at engine number 1 would be 135 + 10, or 145 pounds.

How much of this total of 145 pounds would be provided by the 90 pounds static pressure at the hydrant and utilized by the first pumper is unknown. It depends upon the size and length of main supplying the hydrant (i.e., whether or not the 90 pounds could be maintained after water starts flowing in the mains), and the percentage of hydrant pressure that could be transmitted through the particular pump operated at the hydrant.

Hazards of V. L. Extinguishing Agents

A new advisory text covering the hazards of common vaporizing liquid extinguishing agents has just been published by the National Fire Protection Association, it was announced by Robert S. Moulton, technical secretary of the Association.

Designated NFPA No. 182-M, "The Hazards of Vaporizing Liquid Extinguishing Agents," the text was published following its submission to NFPA membership at the NFPA Annual meeting in Cincinnati. The publication gives an evaluation of the practical toxicity problems associated with the use of common vaporizing liquid in hand fire extinguishers. While this text has been published in the format of an NFPA standard, it is intended for informative and advisory purposes only.

NFPA No. 182-M is available in pamphlet form (8 pages, 25 cents per copy) from the NFPA, 60 Batterymarch St., Boston.

Persons in the News

Chief Loftus to Retire

Fire Chief Peter Loftus, who has headed the New York City Fire Department for the past eight years, has asked to be retired and has applied for a pension of three-fourths pay, based upon a permanent injury he suffered in line of duty three years ago. His salary was automatically increased to $15,000 on July 1 when other fire department salary adjustments went into effect.

Chief Loftus has served in the department 35 years and advanced through the different grades, to become chief in July, 1948, at which time he was in a secondary position to the then "Chief of Staff and Operations," a post created in 1946 under which his activities were limited largely to fire fighting. The Chief of Staff was Frank Murphy, a friend of former Mayor O'Dwyer.

Chief Loftus supported Vincent R. Impellitteri in 1950 in his successful campaign for Mayor. Soon after he took office, his Fire Commissioner, George P. Monaghan, abolished the title of Chief of Staff and Operations. Chief Murphy retired, as did former Fire Commissioner Frank Quayle and Deputy Commissioner James Moran, now in prison on an extortion charge.

The election of Mayor Wagner and his appointment of Edward F. Cavanagh, Jr., as Fire Commissioner brought another change in the status of Chief Loftus. Commissioner Cavanagh established a new administrative set-up, with Assistant Fire Chief Edward Connors as Chief of a new Division of Personnel and Administration—Uniformed Force. This action reportedly stripped Chief Loftus of administrative powers he possessed in 1951.

If Chief Loftus is retired it is said his successor will be a ranking chief who will hold the title of acting chief of department pending promulgation of a new civil service list for the post. Presently, active fire extinguishing duties are being divided between a number of assistant chiefs. It is reported that a number of changes in high ranking personnel are being made in the department in line with the policies laid down by Fire Commissioner Cavanagh.

Coincident with the retirement of Fire Chief Peter Loftus, it is reported Deputy Fire Chief Thomas A. McCoy will retire on September 16, at half pay of $5,425 plus a $500 bonus for serving 10 years beyond the 20-year minimum.

Chief McCoy is a veteran of 38 years service in the department and he has been serving as principal aid to Chief Loftus. He joined the department in 1917 and reached his present rank in 1948.

Sether Leaves N.B.F.U.

J. Wendell Sether has been appointed Director of Publicity for "Newsweek," according to an announcement by Theodore F. Mueller, Publisher. He was formerly manager of Public Relations for the National Board of Fire Underwriters.

A graduate of the University of Southern California, Mr. Sether began his business career with the Los Angeles "Evening Herald and Express." At the outbreak of World War II, he entered the Service of the Coordinator

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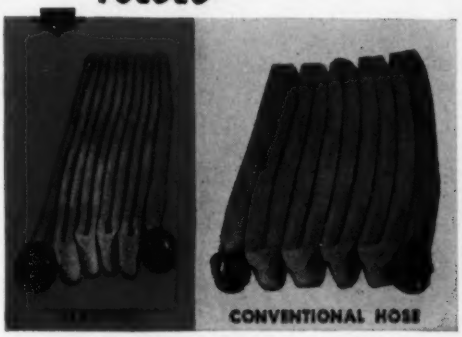

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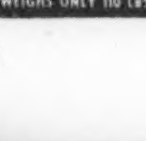

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of Information (predecessor of the O.W.I.). Later, having been transferred to London by the O.W.I., he was appointed Chief Editor of the American Broadcasting Station in Europe. Returning to the United States in 1946, he became associated with the National Board of Fire Underwriters.

Chief Souders of Eureka Retires

After 55 years of continuous fire service Chief M. E. (Cap) Souders has resigned as head of the Eureka, Kans., Fire Department.

Nearing 80 years of age, "Cap" Souders is still hale and going strong. He recently took up flying.

The veteran began his career with the Eureka Fire Department in 1900 as Foreman of the Mechanics Hose Co. and later became Assistant Chief. He was elected Chief in 1917 and has served in that capacity ever since.

The City of Eureka accepted Souders' resignation with regret and appointed R. E. Clark as Chief of the Department.

Thanks W. H. BURDEN

Plattsburg Appoints Gervais as Permanent Chief

The Plattsburg, N. Y., Common Council appointed Jeremiah K. Gervais as its first permanent fire chief in June at a salary of $4,150-$4,650. Two assistant chiefs also were appointed. They are Ernest J. Duffany and Richard A. King. Their salaries are each $4,000 a year.

Chief Gervais has currently been serving as Acting Fire Chief.

Boone Chief at Chapel Hill, N. C.

J. S. Boone, veteran Assistant Chief of the Chapel Hill, N.C., Fire Department, has replaced Chief P. R. Perry as head of the department.

The new head will be the first paid chief of the department under the reorganization plan which went into effect July 1, 1955. He has served as paid assistant chief for many years. The new set-up of personnel will include the chief, seven full paid, ten call men, and sixteen volunteers.

Thanks J. C. ROBINSON

Fireman Stars at Golf

Firemen, on their off time, can take a mean swing at a golf ball aside from their more arduous task of fire fighting. This was proved decisively on July 11 at the Wheeler Park golf course, Bridgeport, Conn., when Terry Conners, Jr., 39-year-old member of the Stamford, Conn., Fire Department, captured the New England Golf Association individual championship.

Firefighter Conners toured the grueling and heat-scorched 36-hole municipal layout in 73-74-147, four over par, which was two strokes lower than the total posted by Walter Kupiec, defending champion from Springfield, Mass.

Conners had six birdies in his double round, five of them in the morning. A back injury suffered in a fall from a fire truck several years ago bothered him late in the competition, and he finished a very tired player, taking a 4 on the last nine holes.

TOM MAGNER

Obituaries

S. L. County Chief Jack Clay Dead

John W. (Jack) Clay, 55, for nearly 26 years chief of the Salt Lake County fire forces, died last May reportedly as a result of carbon monoxide poisoning suffered in recent fires.

He was overcome by smoke at the Soter Furniture Co. fire in Midvale, and hospitalized. He returned to duty but was again forced to return to the hospital.

Chief Clay was named head of the department in 1929. Previously he had served in the County Roads and Bridges Department. He was widely and popularly known among fire fighters of the Salt Lake County area.

Franklin P. Jones, former assistant fire chief of the county, was named in June, to succeed Chief Clay. He joined the county fire department in June, 1929, and came up through the ranks to be assistant chief in 1949. His 91.5 civil service rating was the highest in the department.

Assistant Chief Amos R. Harding will continue as the only fire fighter in the County Department holding that title, according to the S. L. County Commission.

Veteran Equipment Maker Dies

Phillip A. Wood, 52, proprietor of the Wood Engineering Co. of Topsfield, Mass., manufacturers of fire apparatus, died June 21 in a Danvers Hospital. He was a native of Beverly, a member of the New England Fire Chiefs Association; Essex and Rockingham County Fire Wardens; the Fire Chiefs Club of Rhode Island, and Citizens Hose Company of Danvers.

Mrs. George Graham Succumbs

The many friends of Chief and Mrs. George Graham of Bristol, Conn., will mourn the passing of Mrs. Graham in July, last. She had long been a popular figure at Wentworth Conferences of the New England Association of Fire Chiefs. Chief Graham retired as President of the Association in June of this year. Mrs. Graham had been in failing health for some time.

Chief Fisher of Norwood Dead

Thomas G. Fisher, 71, a fire fighter since 1904, and head of the Norwood, Ohio, Fire Department since 1941, died on June 15, 1955 after a long illness.

The chief was widely known and popular among Ohio Valley fire services. A native of Covington, Ky., he began his fire service career as an outside substitute fireman in the Cincinnati, Ohio, Fire Department and a full substitute a year later. He joined the Norwood department in 1921 and progressed to lieutenant and captain, and was elevated to chief in 1941.

During his career he instituted many improvements in the department. He was a member of the Ohio State Fire Chiefs' Association. He leaves a widow and a son, Marshal Thomas S. Fisher, now with the Norwood Fire Department; one grandchild and one great grandchild.

Thanks PAT HOLZ

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Assembly workers securing catches on breast badges

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Former Newport Chief Eldridge Succumbs

Abel S. Eldridge, 58, for 36 years a member of the Newport, R.I., Fire Department, and from 1944 to January 1, 1955, head of the department, died July 6 last. He had been ill for about a year.

Chief Eldridge's father was also a fireman. During World War I, Chief Eldridge served with the Navy. In 1919 he became a callman in the department. In 1933 he was appointed drillmaster. In 1934 he was named lieutenant and in 1938 advanced to the post of deputy to the late Chief Joseph S. Lawton, whom he succeeded in 1944.

Chief Eldridge was a member of the International Association of Fire Chiefs, the New England Association of Fire Chiefs, Rhode Island Association of Fire Chiefs and Rhode Island Fire Chiefs Club; the Newport County Firemen's League, and the Newport Permanent Firemen's Relief Association and numerous other organizations.

Bess Flynn Dead

Bessie M. Flynn, 64, wife of James A. Flynn, head of the Potter Mfg. Corp., Chicago, passed away in Henry Ford Hospital, Detroit, on July 15. After being blessed with better than average health through the years, an operation became necessary last November. She rallied through the winter, but had to return to the hospital May 10, where she remained until the end.

Few were better known at International Association of Fire Chiefs Conferences than Bess and her husband Jim, and rarely did they miss a meeting.

Jim Flynn, too, has been a patient at the Henry Ford Hospital where, at this time he is reported in critical condition. He suffered a stroke on May 15, from which he has not rallied.

Chief Cox of Haddonfield, N. Y., Dead

Jonathan F. Cox, Chief of the Haddonfield, N.J. Fire Department from 1941 until 1953, when he retired on leave due to illness, died June 26, 1955. It is said his demise resulted from injuries received at a fire 15 years ago.

Chief Cox became a fireman in 1926. He was a member of the Camden County Fire Chiefs Association, the New Jersey State Fire Chiefs Association, the Eastern Association of Fire Chiefs and the International Association of Fire Chiefs.

EDWIN J. CLARK

June Fire Losses

Estimated fire losses in the United States during June amounted to $70,828,000, the National Board of Fire Underwriters has reported.

According to Lewis A. Vincent, NBFU's general manager, this $70,828,000 loss represents an increase of 8.1 per cent over losses of $65,533,000 reported for June, 1954, and a decrease of 1.3 per cent from losses of $71,789,000 for last May (1955).

Losses for the first six months of 1955 now total $469,757,000, an increase of 3 per cent over the first six months of 1954 when they amounted to $455,990,000.

These estimated insured losses include an allowance for uninsured and unreported losses.

World Wide Fire News

By Rod B. Woolley

It Happened as Prophesied

When a helicopter somersaulted and crashed in flames on the 16th and 15th floors of New York's Port Authority Building it wasn't such a surprise to Manhattan fire fighters.

Battalion Chief John P. Mueller, who responded with the first alarm assignment of firemen in response to box and telephone alarms received by Manhattan's fire alarm headquarters, and who directed first contingement of men on the scene, said he knew even before he reached the building what had happened.

"We've been predicting it for some time," he said. "It was just a matter of time."

The crash came when a Bell 46-G helicopter, one of two manned by the Port Authority, took off from the heliport atop the big Port Authority Building at Ninth Avenue and 15th Street.

The pilot and a photographer-passenger were seriously injured but fell clear of the burning craft as it teetered for seconds on the sixteenth-floor ledge before dropping to the floor below.

It is believed that before taking off, the pilot had plugged an auxiliary power cable into the helicopter. This is often done to energize the starter. No attendant was on hand at the heliport and the cable had not been disconnected before takeoff. This caused the craft to fall over and land upside down on a wall about ten feet high around the wide sixteenth floor terrace. As it hit the wall, its plastic bubble shattered and it began burning.

Employes in the building pulled the pilot and passenger away from the helicopter, summoned doctors and turned in a fire alarm. Just as the two victims were pulled clear of the craft, it slid over the far side of the wall and fell to the fifteenth floor. There it broke windows and forced employes to abandon offices. Debris, including parts of the burning tank, fell into Ninth Ave., but luckily no one was injured although at that time of day, 3:20 P.M., traffic along the avenue was heavy and the sidewalks were fairly crowded.

Firemen took rope and tackle to the upper floors and lashed the wreckage to prevent its dropping into the street, which was roped off to traffic and pedestrians. The small fires started by the crash were quickly extinguished.

* * *

False Air Raid Alarm Gives West Jitters

A false yellow alert on May 5 last threw 11 Western states into varying stages of jitters, and preparation for an enemy air raid. The mid-morning mixup in air defense communications set sirens screeching and civil defense workers scrambling in Oakland and other cities, sent interceptor planes skyward, cut off radio and TV stations, and in Sacramento saw 1,000 persons, including legislators, scoot for refuge in the California capitol basement.

The alarm, at 10:40 a.m. (12:40 p.m. Chicago time), lasted officially from 3 to 10 minutes, ranging from Louisiana to the Pacific Coast. A few states were not alerted. Utah, Oklahoma, Arkansas, Missouri, Kansas, Texas and Louisiana used only the "white" (military emergency) signal.

The Continental Air Defense command in Colorado Springs and Air

'Choice for Quality the World Over'

INDIAN FIRE PUMPS are

Be sure to have a stock of **INDIANS** in your department. Fire Chiefs call them "a one man Fire Department" and say "they are worth their weight in gold.

Approved by UNDERWRITERS' LABORATORIES

The INDIAN is available in the lever type, known as our No. 80 INDIAN.

CATALOG ON REQUEST!

The No. 147 adjustable Nozzle will throw any type of spray or fog mist and also will hurl a powerful straight stream of over 30 ft.

For all class "A" fires; and many small class "B" fires can be extinguished with **INDIAN FIRE PUMPS.**

"Please ship six No. 90G Indian Fire Pumps at once. We have 12 Indians in use at the present time and we could not get along without them in our fire department. You cannot beat the Indian Fire Pump for putting out fires."
John H. Mullaly, Jr., *Fire Chief* Millville, Mass.

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VALUE *for 40 Years*

Why do users of Hale Fire Pumps **specify "HALE PUMP"** when they buy new apparatus?

Because these men have learned through practical experience HALE VALUE in terms of:

DEPENDABILITY
FLEXIBLE PERFORMANCE
HIGH EFFICIENCY

For 40 years Hale-equipped Fire Pumpers have upheld a high standard of dependability . . . a dependability that has won the respect of users all over the world.

Hale Fire Pumps are sold only through manufacturers of quality apparatus.

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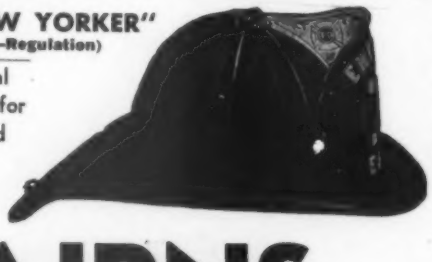
The "NEW YORKER"
(No. 5A—Regulation)

A national standard for a hundred years.



Other Leather Helmets in other weights, in regulation and drop brim style.

CAIRNS LEATHER HELMETS

The Least Expensive
Because
They Last the Longest

Write for Catalog 351

CAIRNS & BRO., INC. - Allwood, Clifton, N. J.

Outfitters to Firemen Since 1836

Force Headquarters in Washington said a Canadian radar station sounded the alarm that unidentified planes were approaching over the Pacific.

In Nevada, there was no real alert. The man who got the signal was new, it is disclosed, and "didn't know what to do with it." In San Mateo County, California, there was none because "the boss of the sirens was home sick."

It was learned that actually the planes were some U. S. Air Force B-47s on a training flight, "but because of a communications delay within the air defense system, Western air defense units failed to receive notification in time to avoid calling the alert," said the Air Defense Command.

* * *

Dear Ol' England Has Phone Troubles

We don't know if Linton, England, is one of those London suburbs that has sidetracked the street fire alarm box for the telephone, but the incident we relate is a bit of all right, wot,—nonetheless. It just goes to prove, we say, that you can have your "false alarms" via telephone as well as box.

Maybe after you've read this chit chat from the "Tight Little Isle" you'll want to revise that classification of "false alarm." Call it what you will, gov'nor, here's the yarn.

Seems that Nurse Norah Lyne, 18, reported lissome, lovely and likeable, wanted to date a handsome fireman whom she had met at a dance.

So Norah picked up the telephone and told the operator: *"Give me the fire brigade."*

"Where are you speaking from?" the operator asked in his or her best brigade tone.

"Linton Hospital," the pretty nurse replied.

Within a minute, four trucks, two radio patrol cars, 50 fire fighters and half a dozen top brass of the brigade and local government were heading hell-bent for the hospital.

All they found was Norah, still holding the line, and still hoping to speak to her boy friend of the brigade.

* * *

From the World Fire News Ticker

In Treviglio, Italy, lightning ripped through a television antenna during a storm, blasted the set and knocked nine spectators from their chairs in a public bar. Glasses were overturned. Luckily, the spectators suffered only minor burns —and fright. . . . A fire in the hold of the Canadian collier Maidenhead was brought under control by the ship's crew May 26, with the aid of 55 fire extinguishers flown to the ship by a British Naval helicopter. . . . A 50-year-old aviation company employe admitted dumping and burning a $16,000 crated plane to delay its shipment to Iceland. The clerk, also a truck driver for the Solberg Aviation Co., admitted he destroyed the 4-passenger Cessna for "personal reasons." He poured gasoline on its crate and set it afire, causing an explosion in which he suffered first and second degree burns of face and hands. He went from the hospital to the courthouse. . . . Fire started the night of June 24 in the Soviet delegation building in Geneva, Switzerland, where Nikolai A. Bulganin was expected to stay during the Big Four conference. Staff members first reported the fire in the "Russian Villa." Swiss fire fighters rushed to the scene and quickly doused the blaze, which centered on the roof of the two-

story villa. Cause—not advanced. . . . A chemical explosion at a New York state processing plant June 21 killed two men and injured four others. Men were reportedly working on a highly secret Navy project when the blast ripped a small building at the heavily guarded Malta Test Station, south of Saratoga Springs, N. Y. . . . A 55,000-gal. tank exploded in June at an atomic energy construction project at Oak Ridge, Tenn., spilling chemicals on 15 workmen. Three men suffered "caustic burns" and 12 others were burned less severely. The AEC said the tank apparently exploded and tipped over, breaking steam and water lines on which men were working. No fire resulted. . . . In Haringen, near Hersfeld, Germany, a chlorine gas line broke on July 2 and police said 50 persons were felled in a cloud of poison gas reported moving across into the Soviet Zone. . . . A motorized-railway coach crashed into a truck July 3, loaded with sulphuric acid, near Taipei, Formosa, spraying the coach and passengers with the deadly acid. Twenty-nine of the 36 passengers suffered severe burns. . . . In Genoa, Italy, a violent methane gas explosion seared the big Ansaldo industrial works June 24, killing three persons and injuring at least 22. . . . About 1000 firemen walked out of fire stations in Sydney, Australia, June 23, last, in support of demands for a 40-hour week, leaving Australia's largest city with only a handful of men on duty. Press accounts said only 40 senior fire officers were on duty. . . . In Strasbourg, France, the local fire department was on strike July 6, last. "We are not servant girls to do all kinds of odd jobs," a spokesman said. "We are tired of rescuing tomcats from tin roofs; storks from broken chimneys; and jacking derailed streetcars onto the tracks. We are particularly sick of marching in political parades." The city recently refused firemen a salary increase. . . . Early on June 18 fire raged through a "model" insane asylum in Ichikawa, Japan, burning 18 inmates to death behind the barred windows. Authorities believed a crazed inmate of the Shikiba mental hospital started the blaze. . . . On June 12, fire of unknown origin destroyed 50 buildings in Aomiri, Japan, 28 of them residences, before it was controlled. No injuries reported. . . . Old Faithful Geyser, which coughs up water and hot fog at Yellowstone Park, was unable to contribute toward extinguishing a fire that destroyed a combination tourist cabin office, girls' dormitory and public laundry on the 'Geyser grounds' June 29 last. Loss $100,000. . . . Fire wrecked one of New York's last remaining Colonial Homes on June 26. The house, which has thirty inch walls and was built some 200 years ago in the Bronx, reputedly was used as a hunting lodge by Aaron Burr. It had been unoccupied for six months. The blaze, starting in the kitchen, ruined six of the eighteen rooms. . . . Two $1 million jet planes (F-89's) were destroyed by fire, two others damaged and a C-48 transport was hit when 12 practice rockets, which did not carry live warheads, were discharged from a parked jet fighter at the Portland, Ore. Air Force Base. No one was injured but one 3½ in. missile hit a house a mile distant. The usual "probe" was begun at once. The Senate on June 29 passed and sent to the House of Representatives a bill that would authorize the government to pay damages for loss of life, injury to property in the 1947 Texas City disaster. The Government would be responsible for the deaths of 570 persons, injury of 3,500 others and widespread property losses in a series of explosions set off on a ship being loaded with nitrate fertilizer.

Syracuse Now All-Radio

Establishment of a comprehensive two-way radio communication system in the Syracuse, N. Y., Fire Department is announced by Fire Chief Francis R. Ferren.

Marked increase in the efficiency and effectiveness in handling of fire calls and on-the-fire-ground operations is anticipated as a result of this improvement.

The Syracuse system links fire department headquarters, fire stations and other installations, apparatus and line cars, to the new fire control center at City Hall.

According to Chief Ferren, the system will reduce to a minimum the "move-ups"; enable the control center to keep in touch with all apparatus and line officers, and departmental agencies while en route to and from emergencies and while at fires; enable companies to report back in service from the fire ground instead of waiting until they return to quarters; enable company units to answer any alarms for which they are assigned, while returning to quarters and expand "in-service" fire prevention inspections by fire companies without reporting the units out of service.

The department presently operates 40 two-way mobile radio units. In addition, there are two remote control radio stations, three walkie-talkie outfits, and 183 operators in the department licensed by the F.C.C.

KOHLER Electric Plants

...independent electricity for fire fighting, rescue work, civil defense

MODEL 1.5M23, *1500 watts, 115 volt AC. Manual starting. Weight 130 pounds. Also 115 volt DC model, 101 pounds.*

PORTABLE, compact model is widely used by municipal and volunteer fire departments for floodlights, power tools, resuscitators, smoke eradicators, rescue equipment. Develops 1500 watts. Equipped with 4 receptacles, pilot light, double carrying handle. Rubber-tired hand truck available. Other sizes, 500 watts to 35 KW, including automatic stand-by models to operate sirens, alarm signals, and communications when central station power is cut off.

For civil defense, Kohler stand-by plants insure uninterrupted lighting and communications at headquarters, operation of air-raid sirens. Portable models provide power for rescue trucks.

Kohler Co., Kohler, Wisconsin
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PLUMBING FIXTURES • HEATING EQUIPMENT • ELECTRIC PLANTS
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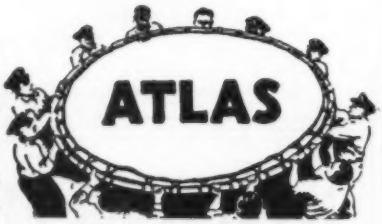
LIFE AND TRAINING

always "SPECIFY"

NETS



HERE is the net that has played a part in the saving of hundreds of lives. Don't be without one — have your men trained in its use. Atlas is the one net available to the fire service that has been expertly engineered and skillfully constructed to stand up for years of service. It's the fastest, safest means of rescue. Get our folder and price — and remember — always SPECIFY an ATLAS on new trucks!

ATLAS SAFETY EQUIPMENT CO., Inc.

27 WARREN ST., NEW YORK 7, N. Y.

MEMCO AERIAL LADDER

designed to materially increase the efficiency of your fire service—*even in the small community*—the Memco fits into any department, and is priced so that your own department can afford one.

Electrically operated by power from the truck battery—it can be installed on one of your present trucks, or incorporated into a new combination by your fire truck manufacturer.

for details write

MEMCO AERIAL LADDER CO.

1007 N.W. 36
Oklahoma City 18, Okla.

apparatus shown below built by W. S. Darley Co., Chicago, for Home Hook & Ladder Co., Thibodaux, Louisiana

What's Burning

THE following list includes fires of $10,000 loss and over in the United States and Canada for the month of July, 1955.

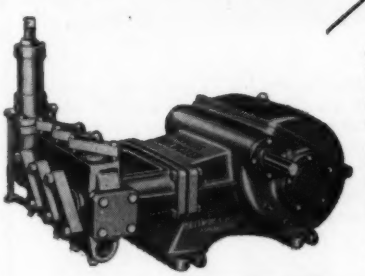
Month Ending July 31, 1955

Buckeye, Ariz.—Abraham's Market destroyed.
Tucson, Ariz.—Italian Village restaurant destroyed. Gas leak.
Arkadelphia, Ark.—Sawmill department at John Sturgis Lumber Co., a mile east, destroyed.
Little Rock, Ark.—Terry Dairy Products Co. plant damaged. Dynamite explosions.
East Los Angeles, Cal.—Warehouse housing Mason Supplies, Inc. and Ore Grande Lime and Stone Corp., destroyed. Trash fire.
Los Angeles, Cal.—Solis Foundry, CAC Corp., mattress factory, and McClintock & Taylor, Inc., fuel pump testing station.
Los Angeles, Cal.—"Your Neighborhood" Market damaged. Overheated motor in refrigerator.
Los Angeles, Cal.—Warehouse of Mason Supplies, Inc., destroyed.
Oakland, Cal.—Warehouse of Canned Goods Distribution Center destroyed.
Sacramento, Calif.—Crystal Cream & Butter Co. destroyed. Exploding truck.
San Diego, Cal.—Salvation Army warehouse and dwelling destroyed; three other dwellings and two sheds damaged.
San Francisco, Cal.—Italian Village night club damaged.
South San Francisco, Cal.—Gamien Chemical Co. damaged extensively.
Walnut City, Cal.—Bargain City destroyed.
Stamford, Conn.—Taylor-Reed Corp., warehouse destroyed. Arson.
Graceville, Fla.—Graceville Auto Co. damaged.
Tampa, Fla.—Citrus Insecticides plant and warehouse of Superior Fertilizer & Chemical Co. damaged. Lightning.
Titusville, Fla.—Hanger at Titusville Airport destroyed.
Pierce, Ida.—Clearwater County Telephone and Pierce General Store destroyed.
Reubens, Ida.—Johnson's general store, tavern, post office and Grange hall, destroyed.
Chicago, Ill.—Maurice L. Rothschild clothing store in downtown, destroyed.
Chicago, Ill.—Building owned by Chicago Distribution Warehouse Co., and used as freight warehouse, damaged.
Chicago, Ill.—Garage owned by Good Humor Corp., damaged.
Chicago, Ill.—Grand Central Auto Co. damaged.
Joliet, Ill.—Two liquor stores, two furniture stores, laundry and apartments in business area, destroyed.
Libertyville, Ill.—Barns at Hawthorn-Melody farms destroyed.
Evansville, Ind.—Building filled with groceries and paper supplies, occupied by A. Brown & Co., wholesale grocers, destroyed.
Evansville, Ind.—Warehouse filled with raw materials of Faultless Caster Co. damaged.
Shelbyville, Ind.—Shelby County Farm Bureau building damaged.
Des Moines, Ia.—Building known as National Building, housing Antique Book and Gift Shop, Deluxe Cafe, Midway Tavern, Ned Barber fruit stand, Des Moines Pawn Shop, Joe Fasano Barber Shop, Docust Billiards, A. Gordon Men's Clothing, Haliburton Sign Co., Central Employment Agency, Midwest Club, Harold Schwartz fruit broker and Storey-Kenworthy warehouse, destroyed.
Des Moines, Ia.—Building housing Club Venetia and a tavern destroyed.
Manchester, Ia.—Buildings on Ross W. Childs farm destroyed.
Sioux City, Ia.—Schoeneman Lumber Co. destroyed. Defective wiring.
Topeka, Kans.—Old wing of Methodist Home for Aged heavily damaged.
Elizabethtown, Ky.—Wing of old high school building destroyed.
Ville Platte, La.—Storage bin of Mamou Rice Mill destroyed.
Springfield, Mass.—Building of Springfield Cold Storage Co., a block away from Main street shopping and business center, destroyed.
Carson City, Mich.—Central Bean and Grain Elevator destroyed.
Detroit, Mich.—Simms Lumber Co. yard destroyed.
Detroit, Mich.—Detroit Boat Club on Belle Isle, damaged.
Detroit, Mich.—Lumber shed at J. A. McIvor Lumber Co. destroyed.
Flint, Mich.—Barn on Mrs. Doris Price farm destroyed. Lightning bolt.
Portland, Mich.—Portland Drug Co. store destroyed. Cigarette dropped through sidewalk grating into wastepaper in basement bin.

West Branch, Mich.—Cadillac Coach Co. damaged. Spontaneous ignition.
Biloxi, Miss.—Post exchange branch and cafeteria in hospital area of Keesler Air Force Base, destroyed. Electrical short circuit.
Joplin, Mo.—Downtown department store at American Hotel destroyed.
Atlantic City, N. J.—Union Baptist Temple destroyed.
New Shrewsbury, N. J.—Airport Inn destroyed.
Orange, N. J.—Warehouse at 261-3 Reock street, destroyed.
Vincentown, N. J.—Two barns on Edwin B. Haines Dairy farm on Route 206 destroyed.
Alamogordo, N. M.—M. R. Prestridge Lumber Co. mill damaged.
Buffalo, N. Y.—Lake Erie Foundry Co. destroyed.
Monticello, N. Y.—Firebird Restaurant, a recently opened night club on Route 17, destroyed.
Northville, N. Y.—Sacandaga summer theatre at Sacandaga Park destroyed.
Red Creek, N. Y.—Two buildings of GLF Feed Mill destroyed.
Rhinebeck, N. Y.—Administration building and two other buildings on Dutchess County Fairgrounds, destroyed.
Saratoga Springs, N. Y.—Barns at Saratoga Race Track destroyed.
Charlotte, N. C.—Carolina China Market building destroyed.
Clinton, N. C.—Carolina Tobacco Warehouse, three nearby dwellings, sixteen new tractors and quantity of other trucks and heavy equipment, destroyed. Lightning.
Dunn, N. C.—Building of Godwin Building Supply Co. damaged. Sawdust left in a floor sanding machine ignited.
Erwin, N. C.—Cotton storage building of Erwin Mill damaged.
Hamilton, Ohio—Hamilton Paint & Wallpaper Co., spread to Welfare Finance Co. and American Legion clubroom, damaged.
Tiffin, Ohio—Warehouse of Berthold Grigsby, Inc., Cleveland wholesale florists, damaged. Lightning.
Duncan, Okla.—Carpenter shop at Hilliburton Oil Well Cementing Co. and some expensive machinery and equipment, damaged. Explosions.
Enid, Okla.—Consumer's Co-op grain mill, four blocks from downtown, damaged.
Baker, Ore.—Stud Lumber Co. destroyed.
Corvallis, Ore.—Turkey brooder house on Oregon State College property destroyed.
Dorena, Ore.—Dorena general store and post office destroyed. Explosion.
Lakeview, Ore.—John Collins Motor Car Co. destroyed.
Medford, Ore.—Medford Furniture Co. destroyed. Short circuit.
Portland, Ore.—Progressive Hatchery destroyed.
Sherwood, Ore.—Lowen machine shop, apartment and thirty thousand chickens, destroyed. Short circuit.
Emporium, Pa.—Ammonia Nitrate building at Pennsylvania Powder Co. plant destroyed.
Erie, Pa.—U. S. Laundry Co. plant destroyed; adjacent paper firm building damaged.
Franklin, Pa.—Marvin Manufacturing Co. plant damaged.
Gap, Pa.—Barn on Milton Slaymaker farm, two miles northeast, destroyed.
Hershey, Pa.—Barn on Farm No. 41 of Hershey Estates destroyed.
Kennett Square, Pa.—Three double mushroom houses and adjoining packing shed, destroyed.
McKeesport, Pa.—Ruben Furniture Co., G. C. Murphy Co. and Wilbur-Rogers Co., a women's apparel shop, damaged. Short circuit.
Mt. Joy, Pa.—Barn on John K. Fischer farm, a mile west, destroyed.
New Mount Joy, Pa.—Barn on David C. Witmer farm destroyed.
Philadelphia, Pa.—Episcopal Church of the Redemption destroyed. Arson suspected.
Phoenixville, Pa.—Barn on Mainfield farm, two miles south, destroyed. Lightning.
Sharon, Pa.—Medal Manufacturing Co. plant in downtown area, damaged. Firm fabricates aluminum products.
Uniontown, Pa.—Keystone Hanger Co. plant destroyed. Paint and solvent exploded.
York, Pa.—Warehouse occupied by C. L. Glackin, a concrete contractor and Henry A. Blades Express Co. and two adjoining dwellings, destroyed.
Johnston, R. I.—Freight shed and loading dock of New York, New Haven & Hartford Railroad, heavily damaged. Scrap motion picture film exploded.
Pawtucket, R. I.—American Coated Paper Co. plant destroyed.
Dallas, Tex.—Building housing Texas Van Lines and C. King Furniture Co. damaged. Explosion.
Salt Lake City, Utah—Lake Side Mill of Utah Poultry and Farmers Cooperative destroyed.
Vergennes, Vt.—Dairy barn of Weeks State School for Juvenile Delinquents damaged. Incendiary by escaping inmates.
Dillwyn, Va.—Barnes Lumber Co. mill destroyed.
Richmond, Va.—Richmond Salvation Army headquarters warehouse-workshop destroyed.

HERE'S HOW *Four Wheel Drive* USES

MYERS BULLDOZER PUMPS



A Myers Bulldozer for high pressure lines and a main pump for high-capacity requirements provide FWD pumpers with a potent one-two fire-fighting punch.

Fire chiefs in communities the country over count on Myers fire pumps in equipment built by many leading fire engine manufacturers. Write today for details and a Myers fire pump catalog.

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WATER SYSTEMS AND WATER SOFTENERS

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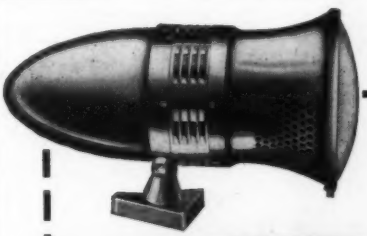


MODEL 20 SIRENLITE
for Emergency Vehicles

Siren sounds a penetrating warning, red light automatically flashes authority. Traffic opens instantly, day or night. FREE ROLLING feature.

STERLING SIRENS

- HANDSOME
- RUGGED
- RELIABLE

Built by proud craftsmen to the highest standards of precision manufacturing . . . utilizing materials of finest quality . . . Sterling Sirens give year-after-year of unsurpassed dependability and satisfaction.

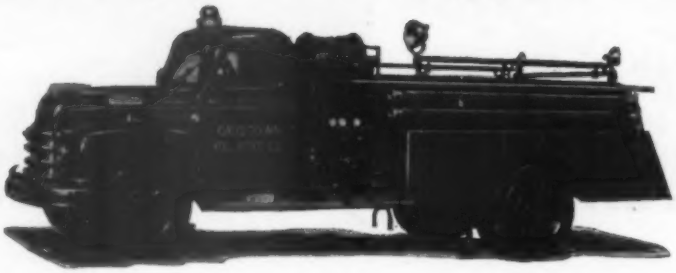
MODEL M GENERAL
FIRE ALARM SIREN
for Volunteer Systems

Quick acceleration, power-plus . . . Model M really gets the boys out in a hurry! Used by championship companies from coast to coast. A dependable, heavy-duty siren built of the finest materials throughout.

Complete line of Siren Equipment • *Bulletin on Request*

THE STERLING SIREN FIRE ALARM CO., INC.
10 BARTLETT ST., ROCHESTER 8, N. Y.

Champion Fire Apparatus



A highly efficient pumper apparatus with the Champion Three Stage Centrifugal Pump powered by Diamond T. The Pump is the Type SH750 which delivers 750 gallon Underwriter performance plus 60 gallons per minute at 850 lbs. for high pressure fog.

Or this Darley Apparatus is also available in Underwriter capacities of 1000 GPM and 500 GPM. Modern commercial truck motors have adequate power for either 1000, 750, 600 or 500 GPM pumps.

A few Territories open for Sales Representatives. Write us.

Write for Fire Apparatus Booklet and Fire Equipment Catalog

Factories—Chicago and Chippewa Falls, Wis.

W. S. DARLEY & CO., CHICAGO 12

AT YOUR SERVICE: Sales and Service Representatives—East, Midwest, North, South

Oil Reservoir — Filled through pipe plug in bonnet — assures positive lubrication of stem threads.

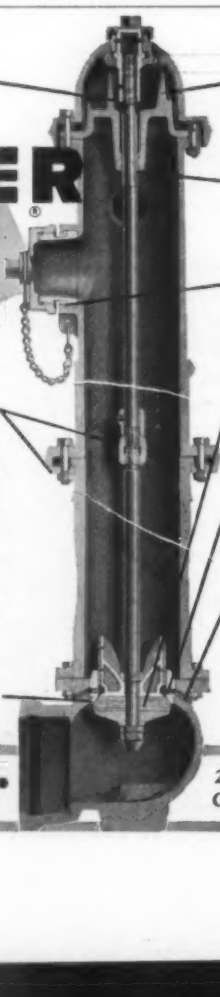
MUELLER®

AWWA Improved

FIRE HYDRANT

Safety Stem Coupling and Safety Flange — Coupling and flange break on impact, preventing damage to stem and barrel. Permits convenient facing of nozzles. Extension sections may be added or upper barrel may be changed from two-way to three-way hydrant without digging or water shut-off.

Bronze Seat Ring — Straight threads for easy removal.



Dry Top Design — Prevents freezing of stem threads.

"O" Ring Seals — Make permanent water-tight seal around stem.

Breech Locked Nozzles — Interlocking lugs prevent blowout.

Compression-type Main Valve — Closes with water pressure.

Double Drain Valves — Integral part of main valve assembly.

Double Drain Openings — Force flushed each time hydrant is operated.

Write for Catalog A-201 today or contact your Mueller representative.

MUELLER CO.
Dependable Since 1857

2501 Chestnut St., Chattanooga, Tennessee

Granite Falls, Wash.—Olson Shingle Mill destroyed.
Yakima, Wash.—Desmond Shearer Orchards warehouse, machinery and 75,000 boxes of apples, destroyed.
Milwaukee, Wis.—Milwaukee Metal Products Co. plant damaged.
Saratoga, Wyo.—Everist Grocery in downtown destroyed.
Kenora, Ont.—Hardware store damaged.
Kingston, Ont.—Office building in downtown damaged.
Sault Ste. Marie, Ont.—St. Veronica's Roman Catholic Church damaged. Cigarette butt.
Toronto, Ont.—S. Barber & Sons Ltd. damaged. Spark from a welder's torch ignited paint.
Toronto, Ont.—Wally's restaurant destroyed.
Montreal, Que.—Nearly completed apartment building at 4465 Ontario street, east, destroyed. Explosion.

News of the Manufacturers

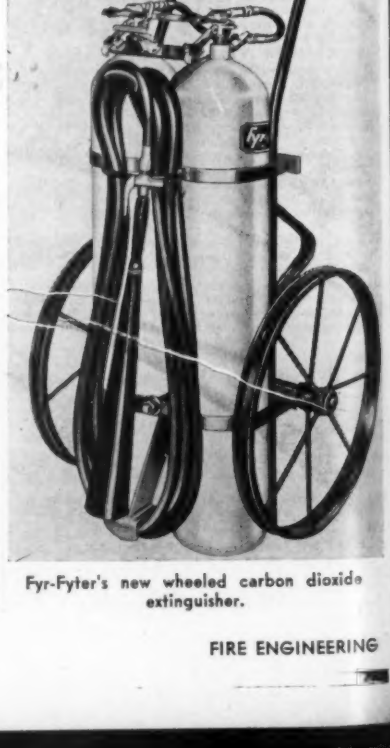
(*Continued from page* 696)

ponent parts of standard sprinkler systems and to provide instant notification of abnormal conditions at any protected property. Signals are carried simultaneously to Notifier's remote station receiving panel. The automatic coding and recording of such conditions by date and exact hour and minute is an additional feature and provides complete permanent records for Inspection Bureaus. These systems are fully illustrated and described in a recently issued bulletin. Copies are available upon request to Notifier Manufacturing Company, 239 South 11th Street, Lincoln, Nebraska.

New Wheeled Carbon Dioxide Extinguishers by Fyr-Fyter

A new line of carbon dioxide wheeled engine fire extinguishers is now in production at the Fyr-Fyter Company in Dayton, Ohio.

Cylinders on each of the engines are capped by lever-operated valves which permit the immediate discharge of the liquid CO_2 so that the engines can be put into action almost immediately. The new engines are made in 50, 75 and 100 lb. capacity models, all of which are approved by Underwriters' Laboratories.



Fyr-Fyter's new wheeled carbon dioxide extinguisher.

The twin 50 lb. cylinders on the 100 lb. model (illustrated) can be operated independently of each other, or in tandem. The manifold assembly on the 100 lb. model consists of high-pressure rubber hose fittings which are able to withstand rough use.

For additional information, write to the Fyr-Fyter Company, 221 Crane Street, Dayton 1, Ohio.

John B. Davies Honored

John B. Davies, manager of industrial sales, Mine Safety Appliances Company, Pittsburgh, was elected president of the Industrial Safety Equipment Association at the group's recent annual meeting.

Mr. Davies, a native of Pittsburgh and a veteran of World War I, is a graduate of Carnegie Institute of Technology. He joined Mine Safety as a chemist in 1919, five years after the company was founded. Before assuming his present position, Mr. Davies was assistant sales manager.

A.D.T. Opens New Central Station

Civic and municipal leaders from Iowa and Illinois communities took part in the dedication ceremonies of the new Quad-City Central Station of American District Telegraph Company, at Rock Island, Ill., which was opened officially on Thursday, July 21.

Heretofore, ADT burglar and fire detection services have been monitored from smaller central stations located at Davenport and Moline. Company officials noted the rapid growth of the Quad Cities, and decided that integration of all ADT protective facilities into one centralized headquarters at 1516 Sixth Avenue, Rock Island, would provide improved service for commercial and industrial establishments in the area.

Kidde Makes Major Changes

John F. Kidde, president of Walter Kidde & Company, Inc., Belleville, N. J., has announced a realignment of management organization and responsibility in the corporation to provide for future company expansion, improve customer relationship and give closer control to individual product lines.

The program creates five divisions, each operating under a vice-president who will be general manager of the division responsible for product design, manufacturing and sales.

The divisions will be: Aviation Division; Industrial and Marine Division; Engineering and Research Division; Textile Machinery Division and the International Division.

Minneapolis Fire

(*Continued from page 693*)

were engaged, with civil defense volunteers and a U.S. Navy fire rig and some Minneapolis firemen, in a struggle to subdue a hot fire in a rooming house at 807 D. Seventh St. This fire was discovered by members of a Minneapolis Rescue Squad about 5:30 p.m. while returning to the Third Avenue fire from an emergency run. The Squad called the Fire Dispatcher by radio, then pitched in to help elderly residents of the frame structure to safety.

The fire roared through the roof, destroying the upper part of the structure. By 5:20 p.m. the Ford-McNutt building was a mass of rubble. Fire fighters

no matter the
WEATHER

Sub-zero or sweltering sun, the Globe Suit is comfortable, always. The all-weather secret is in the selection of linings. And, too, in the interlining made with 100% DuPont Neoprene. "The Suit that Suits," the quick-hitch Globe Suit, has been endorsed by Fire Chiefs *everywhere* since 1901. See it at your dealers or write for our descriptive folder.

STANDARD SINCE 1901
GLOBE SUITS
GLOBE MANUFACTURING CO. PITTSFIELD, N.H.

Fires go down and out,
QUICK
when you hit them with UNOX!

The three dimensional action of UNOX Foam or UNOX Wetter Water is sure, quick death to fires.

1. **It spreads faster over the burning surface.**
2. **It cools quickly to extinguish the fire.**
3. **It penetrates even on water repellant surfaces.**

McFarland Foam maker nozzles; proportioners; portable, pressurized "fire wagons" and other equipment for the use and application of UNOX have increased its efficiency and broadened its range of applications for all fire-fighting units.

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As a practical help to anyone who is confronted with the problem of hazardous gases, mists, fumes, smokes and dusts, ACME offers this valuable Protection Guide. It lists 433 of these hazards along with the ACME Gas Mask Equipment designed to give you dependable protection in each specific case. This vital information is available exclusively through ACME. Write for your copy today.

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You never have that "horse-blinder" feeling with the ACME Full-Vision Gas Mask. Its patented larger lenses provide full, natural vision with greater comfort along with protection you can rely on. Other ACME features include easier breathing, less fogging, and increased audibility. There's an ACME Mask to provide the right protection for every hazard such as those listed in the Protection Guide. Write for Bulletins 541 and 542 describing ACME canister gas mask equipment.

ACME PROTECTION EQUIPMENT COMPANY
1215 Kalamazoo Street
South Haven, Mich.

had controlled the fire in the three upper floors of the Nott firm and the roof of the Fur-Tex building. Of the sporadic fires that broke out elsewhere in the loop, the most serious were three separate roof blazes in the 300 block on Hennepin Ave.

Another blaze at 8:12 p.m. in the penthouse of the Palace Building, Fourth St. and Nicollet Ave., housing the Northwestern Bell Telephone Company offices, kept firemen busy more than an hour. Still another small fire was reported on the roof of the main telephone building at Fifth St. and Third Ave. S. Some awning blazes were reported from a number of other locations.

Because of the threat to the area, the shortage of manpower and equipment, Chief Malmquist sent out radio and television appeals to "loop" businessmen, urging them to post watchers on roofs of their buildings and extinguish all small fires which they possibly could.

Meanwhile 50 extra policemen and later, 200 auxiliary C.D. policemen, were pressed into service to control traffic and hold back the crowds and curious spectators.

By 6:30 p.m. firemen had gained the upper hand, but remained on the scene all night, watching not only the smoking ruins, but the roofs of some 14 large buildings in the area.

With Our Readers

Juvenile Fatalities Can Happen

To the Editor:

I have just finished reading your article in the February, 1955, issue concerning loss of life among the younger folk of our nation. This is the second time I have read it prior to a fatal fire in which seven young people lost their lives, on the East side of Tacoma, Wash.

Jay Stevens says "It does not need to happen." I echo the statement, "Why does it happen?" Jay Stevens, and Chiefs Fitzgerald of Seattle and Grenfell of Portland were in Tacoma to see me on April 7, concerning the home inspection program I have been carrying out, and we talked about the loss of life in the Eastern part of our Country. At that time I believed in my heart that it could never happen in Tacoma. But it did, and this is the account of that tragedy.

A Mrs. M.... had gone to a drive-in theatre in Tacoma with her boy friend (she is now in process of getting a divorce from her husband who is in San Diego). She left her family of six in the care of her 15-year-old brother who was on leave from the State Training School (he was in for many robberies—in fact, more than any boy of his age in the northwest).

The house in which they lived was a sub-standard, 1½-story frame dwelling with cedar shingles, wood walls and ceilings, covered with paper, open stairway off the kitchen and, at the time, all windows were closed and hall doors open.

It appears that all were asleep at the beginning of the fire, which started in our opinion from the motor of an old refrigerator in the kitchen. Engine Co. 4 is only 2½ blocks away from the house which is on a dead-end street. The two nearest fire plugs are each 1½

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Easy to install, rugged and sturdy to the extreme! Leonard Pumps are guaranteed. Deliver 150 GPM at 150 pounds.

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Omaha Drill Team to Perform

The fast stepping Omaha (Nebr.) Fire Department's crack drill team will make two appearances at the annual convention of the International Association of Fire Chiefs in that city September 19 through 22. The 1,600 visiting fire chiefs will witness the team's precision marching during the convention's memorial service and annual banquet-dance entertainment program. The unit's color guard is shown here during a recent practice session.

blocks away from the house that burned.

Everything worked in our favor—that is, water, response and equipment, except that the alarm was delayed. It is our opinion that all occupants were dead before the telephone alarm was sent in by the neighbors. A neighbor boy returned home about 12:30 a.m. and we received the alarm at 12:54 a.m.

The dead were M..... E....., age 7; S..... J....., 3; R..... D....., 8½; L..... A....., 9; T..... E....., 11; N..... I....., 12½, and the brother, J..... E..... C....., age 15 years.

Mrs. M..... came home at approximately 2:00 a.m. and it was my job to inform her of the loss of her entire family. I hope you never have to tell such a fact, or see the look on a mother's face that I witnessed.

Yours truly,
H. C. Fisk, Chief,
Tacoma Fire Department.

Davy Crockett Hats Banned

Alas, poor Davy Crockett, "king of the wild frontier," must go—on paper that is.

Chief Sylvester E. Jennings, of the Bridgeport, Conn., Fire Department, claims that Davy Crockett hats, resembling the frontiersman's coonskin cap, and made of crepe paper, are being sold in stores in Connecticut and the Bridgeport Fire Department has ordered them withdrawn from sale in the interest of fire safety, Chief Jennings said.

The hats are made of a "very flammable" material according to Chief Jennings, who warned parents that the novelties can be ignited easily. The hats are being sold at a small cost, making them available to youngsters. They bear no markings or manufacturer's trademark.

Bridgeport fire officials are checking retail and wholesale outlets and where the paper hats are found an embargo will be placed on them if store owners do not halt sale, Chief Jennings said.

Tom Magner

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SERVING THE FIELD OVER 100 YEARS

Double male connections furnished with ear lugs, as shown, or with pin lugs. Larger sizes furnished with long handles.

Double female connections all furnished with rollers, as illustrated, available in the same forms as double males.

Hydrant or pumping unit Wye, furnished as illustrated, all threads recessed with Higbee form cut.

Caps furnished in all sizes, with or without chain connection.

Angle elbow eliminates crimping of hose at the pump and allows full stream capacity.

Plain Siamese or Wye, can be furnished with one female inlet and two male outlets, or with two female inlets and one male outlet.

Screw stem type gates, including a 2½" quarter turn gate valve, for the absolute stoppage of water.

Our unmatched Eastman Deluge Gun, available in two-, three- or four-way models. Can be used as either a portable or permanent gun.

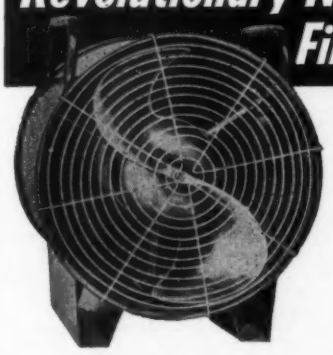
OUR PURPOSE—To provide the fire service with only the highest quality brass goods it is humanly possible to produce at a fair price—to provide the fire service with the means of delivering the most effective fire streams the field has ever known—this is both our purpose and pledge to the service. Over the years our products have attained a high standard of excellence—which will be our purpose to maintain.

OUR PROPOSITION—We will gladly ship sample outfits at our expense on 30 days' trial anywhere in the United States, subject to any test desired. If the product does not come up to our claims in every particular, you can notify us and hold shipment subject to an order. If we can accomplish what we claim you certainly should not be without the product—if we cannot it costs you nothing.

SAMUEL EASTMAN CO., INC.

CONCORD, NEW HAMPSHIRE

Revolutionary New Principle Increases Fire-Fighting Efficiency!



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Convention Dates

Aug. 19-20—OHIO STATE FIREMAN'S ASSOCIATION. Annual meeting, Cincinnati, Ohio. General Chairman, Chief Robert A. Metz, 3673 Eyrick Road, Mack, Ohio.

Aug. 21-23—NEW YORK STATE PERMANENT FIREMEN'S ASSOCIATION. Annual meeting, Auburn, N. Y. Secretary-Treasurer, Robert E. Mills, 420 Plymouth Drive, Syracuse 6, N. Y.

Aug. 22-24—ANSUL FIRE SCHOOL. To be held at the Ansul Chemical Company's test field, Marinette, Wis. For information, contact Director Fire School, Ansul Chemical Company, Marinette, Wis.

Aug. 22-26—TENNESSEE STATE FIRE SERVICE SCHOOL. Annual meeting, Mid-Tennessee State College, Murfreesboro, Tenn. Director, Homer S. Elkins, State Fire Service Instructor, 120 Cordell Hull Building, Nashville, Tenn.

Aug. 22-26—PENNSYLVANIA FIRE SCHOOL. Fire Apparatus Operation and Maintenance Course to be held at the new Pennsylvania Fire School building, Lewistown, Pa. For information, contact Edgar A. Spotz, Adviser, Fire Service Training, Public Service Institute, Box 911, Harrisburg, Pa.

Aug. 24-27 — MONTANA STATE FIRE SCHOOL. Annual meeting, Polson, Mont. Director, Chief Clayton Brown, Fire Headquarters, Polson, Mont.

Aug. 29-31—ANSUL FIRE SCHOOL. To be held at the Ansul Chemical Company's test field in Marinette, Wis. For information, contact Director Fire School, Ansul Chemical Company, Marinette, Wis.

Sept. 5-6—GEORGIA STATE FIRE COLLEGE. Inspectors Fire Prevention Course, Atlanta, Ga. Director, Harry Phillips, Director Vocational Service, State Department of Education, 642 Killian Street, Atlanta, Ga.

Sept. 6-9—MARYLAND SHORT COURSE FOR FIREMEN. Annual meeting, University of Maryland, College Park, Md. Director, Robert C. Byrus, Director of Fire Service Extension, Box 85, University of Maryland, College Park, Md.

Sept. 9-10—NORTHEASTERN PENNSYLVANIA VOLUNTEER FIREMEN'S FEDERATION. Annual meeting, Peckville, Pa. Secretary, E. V. Coleman, Pleasant Avenue, Peckville, Pa.

Sept. 9-10—JEFFERSON COUNTY VOLUNTEER FIREMEN'S ASSOCIATION. Annual meeting and tournament, Cape Vincent, N. Y. Secretary, Lewis Z. Horr, Great Bend, N. Y.

Sept. 10 & 17—VOLUNTEER FIREMEN'S FIRE TRAINING SCHOOL, sponsored by the Alert Firemen's Association, to be held at Lansing, Mich. Secretary, Fire Marshal Archie Burghdoff, 3289 Eaton Rapids Road, Lansing, Mich.

Sept. 11-15—FIREMEN'S ASSOCIATION OF THE STATE OF NEW YORK. Annual meeting, Lake George, N. Y. For information contact the organization at the Hotel Martinique, Broadway at 32nd Street, New York 1. N. Y.

Sept. 12-14—ANSUL FIRE SCHOOL. To be held at the Ansul Chemical Company's test field, Marinette, Wis. For information, contact Director Fire School, Ansul Chemical Company, Marinette, Wis.

Sept. 12-15—CANADIAN ASSOCIATION OF FIRE CHIEFS. Annual meeting, on board C. S. L. "St. Lawrence." Secretary-Treasurer, Chief Allan H. Clark, Fire Headquarters, Lakefield, Ont.

Sept. 12-16—VIRGINIA STATE FIRE SCHOOL. Annual meeting, Norfolk, Va. Director, Clay A. Easterly, Fire Marshal, P. O. Box 1112, Martinsville, Va.

Sept. 12-16—OHIO FIRE STATE FIRE SCHOOL and OHIO STATE ARSON SCHOOL. Annual meeting, Ohio State University, Columbus, Ohio. For information, contact Wayne C. Jenkins, Assistant Director, 111 Wyandotte Building, 21 W. Broad Street, Columbus, Ohio.

Sept. 12-16—PENNSYLVANIA FIRE SCHOOL. Standard Fire Fighting Course, to be held at the new Pennsylvania Fire School building, Lewistown, Pa. For information, contact Edgar A. Spotz, Adviser, Fire Service Training, Public Service Institute, Harrisburg, Pa.

Sept. 13-14—IOWA FIREMEN'S ASSOCIATION. Annual convention and tournament, Grinnell, Ia. Secretary, Carl H. Fuchs, 2749 Kinsey Avenue, Des Moines, Ia.

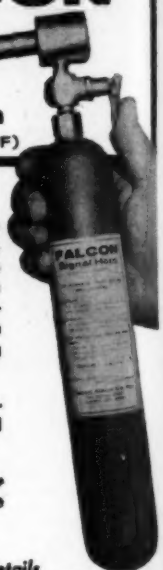
Sept. 13-16—INDIANA STATE FIRE SCHOOL. Annual meeting, Purdue University, Lafayette, Ind. Director, Francis W. Hartman, Chief of Fireman Training, Purdue University, Lafayette, Ind.

NEW

FALCON

Signal Horn

(EXPLOSION PROOF)



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The ideal warning device for industry and large buildings.

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when heat is intense

Use ISSCO's heat-reflecting aluminized asbestos hood and gloves. Gives you that extra protection around face and hands in approaching fire and in flash-backs. Hood has built-in helmet—adjustable to size: 1/4" laminated safety glass window.

Gloves shown are ISSCO 114-AL (One of many styles we furnish).

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Protective clothing for every situation!

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"I recommend BI-KLEEN for the FIRE HOUSE as well as FIRE HOSE!"

For cleaner, longer-lasting fire hose

This statement was made recently by a prominent fire chief because *Bi-Kleen* is not only the ideal cleaning and protection agent for all cotton rubber-lined hose, but it also does an amazingly fast and efficient job of cleaning oil, dirt and grease from the floor—even rough cement floors. Fire hose racks and truck beds need a good cleaning compound, too—and *Bi-Kleen* does a perfect job—keeps equipment "inspection clean" *all* the time with less scrubbing!

Order the inexpensive trial size today! You'll discover safe, non-toxic *Bi-Kleen* will save hose, save work, save money. Sold by the makers of the finest fire hose in the world—Bi-Lateral, flat-folding, non-creasing fire hose.

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Convention Dates

Sept. 14-17—PACIFIC COAST INTER-MOUNTAIN ASSOCIATION OF FIRE CHIEFS. Annual meeting, Sun Valley, Ida. Secretary-Treasurer, Jay W. Stevens, Merchants Exchange Building, San Francisco, Cal.

September 18—GREAT LAKES ASSOCIATION OF FIRE CHIEFS. Annual meeting, Omaha, Neb. Secretary-Treasurer, Chief Elmer Stough, 605-4th Street, Lorain, Ohio.

Sept. 18-22—MISSOURI VALLEY ASSOCIATION OF FIRE CHIEFS. Annual meeting, Omaha, Neb. Secretary-Treasurer, Chief Ray Tiller, 310 East 5th Street, Waterloo, Ia.

Sept. 19-21—ANSUL FIRE SCHOOL. To be held at the Ansul Chemical Company's test field in Marinette, Wis. For information, contact Director Fire School, Ansul Chemical Company, Marinette, Wis.

Sept. 19-22—INTERNATIONAL ASSOCIATION OF FIRE CHIEFS. Annual meeting, Omaha, Neb. For further information contact Chief Daniel B. Tierney, Secretary-Treasurer, 8 Robbins Road, Alington 74, Mass., or the Headquarters Office, Hotel Martinique, Broadway at 32nd Street, New York 1, N. Y.

Sept. 24-25—OLD FORGE FIRE SCHOOL. Annual meeting, Old Forge, N. Y. For information contact W. Lewis Armstrong, P. O. Box 186, Old Forge, N. Y.

Sept. 25-30—CALIFORNIA STATE FIREMEN'S ASSOCIATION, INC. Annual meeting, Avalon, Santa Catalina Island, Cal. Secretary, E. L. Albrecht, St., 1320 N Street, #301, Sacramento 14, Cal.

Sept. 26-29—INTERNATIONAL MUNICIPAL SIGNAL ASSOCIATION. Annual meeting, Rochester, N. Y. For information, contact the Association at 130 West 42nd Street, New York 36, N. Y.

Sept. 26-30—PENNSYLVANIA FIRE SCHOOL. Advanced Fire Fighting Course, to be held at the new Pennsylvania Fire School building, Lewistown, Pa. For information, contact Edgar A. Spotz, Adviser, Fire Service Training, Public Service Institute, Box 911, Harrisburg, Pa.

Oct. 10-14—PENNSYLVANIA FIRE SCHOOL. Fire Apparatus Operation and Maintenance Course, to be held at the new Pennsylvania Fire School building, Lewistown, Pa. For information, contact Edgar A. Spotz, Advisor, Fire Service Training, Public Service Institute, Box 911, Harrisburg, Pa.

October 11—MAINE ASSOCIATION OF FIRE CHIEFS. Annual meeting, Lewiston, Me. For information, Contact Chief Z. F. Drouin, Fire Headquarters, Lewiston, Me.

Oct. 17-19—NEBRASKA STATE VOLUNTEER FIREMEN'S ASSOCIATION. Annual meeting, Grand Island, Neb. Secretary-Treasurer Russel D. Salak. Box 312, Schuyler, Neb.

Oct. 17-20—KANSAS FIRE SCHOOL. Annual meeting, University of Kansas, Lawrence, Kans. Director, Gerald Pearson, Director of Extension Classes, University of Kansas, 111 Fraser Hall, Lawrence, Kans.

Oct. 17-21—PENNSYLVANIA FIRE SCHOOL. Standard Fire Fighting Course, to be held at the new Pennsylvania Fire School building, Lewistown, Pa. For information, contact Edgar A. Spotz, Adviser, Fire Service Training, Public Service Institute, Box 911, Harrisburg, Pa.

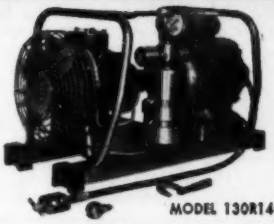
October 18—MAINE FIRE CHIEFS' CONFERENCE. Annual meeting, LeMontagnard Snowshoe Club Rooms, Lewiston, Me. For information contact Chief Zephrin F. Drouin, Fire Headquarters, Lewiston, Me.

Oct. 20-22—ARIZONA STATE FIRE TRAINING SCHOOL. Annual meeting, Phoenix, Ariz. For information, contact Battalion Chief Jake Siken, Fire Fighting Instruction Supervisor, Phoenix Fire Department, Phoenix, Ariz.

Oct. 24-28—PENNSYLVANIA FIRE SCHOOL. Advanced Fire Fighting Course, to be held at the new Pennsylvania Fire School building, Lewistown, Pa. For information, contact Edgar A. Spotz, Adviser, Fire Service Training, Public Service Institute, Box 911, Harrisburg, Pa.

Oct. 27-29—INTERNATIONAL FIRST AID AND RESCUE ASSOCIATION. Annual meeting, Alexandria, Va. For information, contact International Association of Rescue and First Aid Squads, P.O. Box 2098, Potomac Station, Alexandria, Va.

November 20—MARYLAND FIRE CHIEFS' ASSOCIATION, INC. Annual meeting, Baltimore County Fire Headquarters, Towson, Md. For information, contact Chief Lee Cockey, Towson 4, Md.



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Memphis Fog Nozzles

(Continued from page 676)

scale tests on fires in various types of buildings, designed several different types of extension applicators for use with fog nozzles.

The purpose of the applicators, which are light metal tubes fitted with a fog nozzle on one end and threaded swivel on the other and to which the hose is attached, is to enable the fog pattern to be applied into a burning area, from an *adjacent* point. In some instances this may be from outside the building, or from the floor below the fire, or even downward from above.

One of the benefits derived by fire fighters from the use of these applicators is less physical contact with heat and fumes of the fire area. Another is the application of the fog pattern where it is most needed and where, without the use of such implements, it would be impossible to direct the extinguishing agent on the fire.

Fabrication of several of these fog applicators has been completed and others are under construction or being designed. The devices range from two to 18 feet in length and from 1½-inch to 2½-inch in diameter. At least one of each type of applicator will be carried on the deck wagons.

Special Applicators For Large Caliber Fog

During certain fire fighting operations, situations arise where it is advisable to use heavy duty fog patterns, such as is delivered by the JN-200 previously described, and where the smaller nozzle and applicators may be inadequate, and where it may not be possible or advisable to use an appliance such as the stream master.

To meet such conditions, a special five-foot applicator has been designed and built to fit the JN-200 nozzle. This applicator has been fitted with special grips and hand-holds, to facilitate manual operation, under fire extinguishing conditions. This extension pipe, or applicator, also makes it possible to employ this large fog nozzle in indirect fog attack. At this writing, the department has constructed one such "jumbo" extension and has tested it satisfactorily. Several more are being built at the present time.

Such is the brief story of the experiences of the Memphis Fire Department with its specially designed and constructed stream masters and cellar pipes and extension pipes or applicators.

One might deduct from these developments that Chief Klinck and his aides have about exhausted their experimental endeavors in the field of water fog fire extinguishment, at least. But such is not the case.

Rate $8 per inch less 10% for three or more consecutive insertions.

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1½"x50' SJ CRL fire hose, unused but soiled ..... $ .29 ft. cpld.
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UNUSED & CLEAN FACTORY PACKED, GUARANTEED PERFECT

1½"x50' SJ CRL fire hose..... $ .40 ft. cpld.
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¾" or 1"x50' Booster hose..... .30 ft. cpld.
4"x16' DJ soft suction hose, w/4½", spigs. male & long handle female..... 16.50 lg. cpld.
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1938 Autocar Pumper minus 500 gpm Northern Pump assy. Equipment: 1—34' ext. ladder; 1—14' roof ladder. Divided Hose Bed cap. 800' 2½" hose. 2—1½" hose beds on sides cap. 500' 1½" hose. Roller platform capable of holding 5 Indian Tanks. 2 Booster Tanks total cap. 250 gal. New 95 H.P. engine excellent condition. Tires good. Can be seen anytime.

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McINTIRE GATE VALVES

Fig. 164AN

4½" swivel female x two 2½" male Gated Siamese. Quick opening, ¼ turn valves.

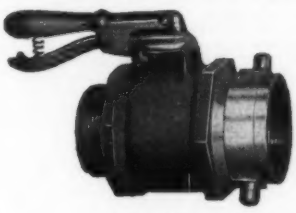

Fig. 163

Made either Right Hand or Left Hand 2½" male x female, gate valve.

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Book Department
FIRE ENGINEERING

305 East 45th St., New York 17, N. Y.

For some time the department has been conducting its own observations and study of the performance of different types of fog nozzles now on the market. While recognizing their respective merit, Memphis fire fighters have the belief that the department could produce a type that would be superior in some respects to those now available. And they are presently experimenting with several different types of nozzles, to that end.

Training of Personnel

(*Continued from page* 678)

proper use and the limitations of that equipment. If trouble is found to result from a design weakness, we fabricate our machine parts or controls which do a better job.

Each year, in our specifications or consideration for bids for new fire apparatus, we try to eliminate the type of construction or a particular way controls or components are assembled that have given us trouble in the past.

All new fire apparatus for San Diego is being ordered with air brakes and air horns. The air brakes help to stop the apparatus more quickly, and the air horns supplement the siren and bell to clear traffic when responding to alarms.

Some Details of Shop Modernization

I have mentioned the shop modernization program. It might be of interest to itemize a few details of that program.

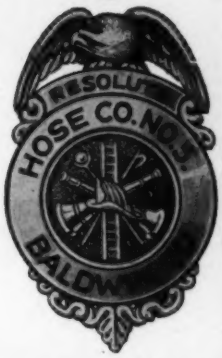
The first step forward was the removal of line shafting and flat belts from the machine shop and installation of separate electric motors with V-belt drives on the following machines: the large lathe, radial drill press, shaper, 100-ton hydraulic press, and power hacksaw.

Some of the new equipment that has been purchased includes: a 12-inch lathe; a drill press; valve re-facer; hard seat grinder; parts cleaner; wheel balancer; dead weight gauge tester; two hydraulic hoists, one for passenger cars and one for fire apparatus; hydraulic transmission hoist; three chain hoists—one-half, one and two-ton capacity; high pressure lubrication equipment; arc welder; fast battery charger; electric and air speed wrenches; modern electrical test equipment; a ten-ton hydraulic porto power unit and pipe bender and a set of micrometer calipers from one to 12-inches.

A carpenter shop was also added and completely equipped (it's surprising how busy a carpenter can be around a fire department!). In addition a modern paint spray booth was built and installed by firemen. Likewise a gas fired forge found a ready niche. Still another improvement was a test pit where our pumper acceptance, and annual operating, tests are run.

The hydraulic hoist for lifting fire apparatus is a twin post lift without rails in between the posts. The rear post lifts the rear of the apparatus by the differential housing. The front post is mounted on rails in a pit enabling it to be moved forward or backward to compensate for different length wheel-bases and to fit under the front axle of the particular piece of fire apparatus to be lifted.

When the apparatus is elevated, it is much easier to make the proper inspections, adjustments and repairs. All modern fire department shops should have one of these twin post hydraulic tools.



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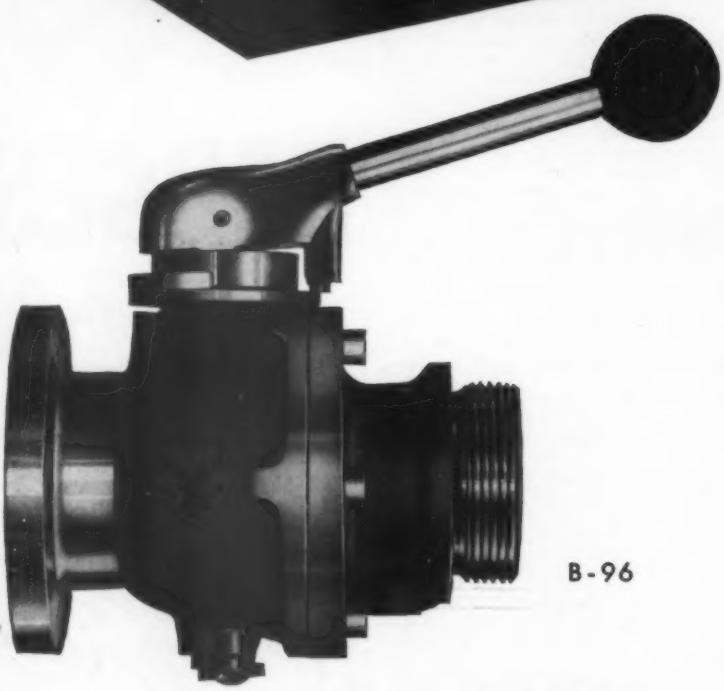

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High or low from either direction. Non-Floating, Chromium Plated ball mounted on close tolerance trunions assures free turning ball valve under highest pressures. It will also hold vacuum for priming pump.

▶ EXCLUSIVE ADJUSTABLE SEAT

The self-lubricated, neoprene ball seat is adjustable through the outlet waterway without disassembly.

▶ SELF-LOCKING HANDLE

Valve automatically locks in any position when handle is released.

Available with flanged or threaded inlet, male or female swivel outlet.

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ELKHART BRASS MFG. CO., INC.

ELKHART, INDIANA

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FIRE ENGINEERING

AUGUST, 1955

	Page
Acme Protection Equipment Co.	724
Akron Brass Mfg. Co., Inc.	697
American District Telegraph Co.	666
American Fire Equipment Co.	724
Atlas Safety Equipment Co., Inc.	720
Audio Equipment Co., Inc.	660
Bar-Way Mfg. Co.	704
Beacon Falls Rubber Footwear	702
Bean Div., John; Food Machinery & Chemical Corp.	663
Bi-Lateral Fire Hose Co.	727
Blackinton & Co., Inc., V. H.	715
Body Guard Mfg. Co.	727
Braxmar Co., C. G.	726
C-O-Two Fire Equipment Co.	662
Cairns & Bro.	718
Circul-Air Corp.	711
Cornelius Co., The	727
Cover, H. S.	716
Darley & Co., W. S.	722
Delco-Remy Div., Gen'l Motors Corp.	658-659
DuPont DeNemours & Co., E. I.	661
E & J Manufacturing Co.	710
Eastman Co., Samuel	725
Elkhart Brass Mfg. Co., Inc.	730
Emerson Co., J. H.	*Inside Front Cover*
Eureka Fire Hose; Div. of U.S. Rubber Co.	701
Everson-Ross, Inc.	729
Fabric Fire Hose Co.	653
Falcon Alarm Co., Inc.	726
Federal Sign & Signal Corp.	651
Fol-Da-Tank	706
Four Wheel Drive Auto Co.	*Back Cover*
Fulton Bag & Cotton Mills	714
Fyr-Larm Co.	726
Gamewell Co.	672
General Electric Co.	656
Globe Manufacturing Co.	723
Goodrich Co., B. F.	655
Hale Fire Pump Co.	707; 718
Halprin Supply Co.	708
Hamilton Rubber Mfg. Corp.	713
Harodikes, Inc.	712
Homelite Corp.	699
Howe Fire Apparatus Co.	667
Industrial Safety Specialties Co.	726
Janesville Apparel Co.	724
Kohler Company	719
Leece-Neville Co.	708
McIntire Brass Works, F. N.	729
Marine Products Co.	714
Memco Aerial Ladder	720
Midwestern Mfg. Co.	670
Mine Safety Appliances Co.	657
Morning Pride Mfg. Co.	729
Mueller Co.	722
Myers & Bro., Co., F. E.	721
National Foam System, Inc.	668
Nicerol Limited	*Inside Back Cover*
Oberdorfer Foundries, Inc.	710
Pacific Reflex Signs	704
Parco Products	700
Powhatan Brass & Iron Works	716
Pyrene Mfg. Co.	662
Republic Rubber Div., Lee Rubber & Tire Corp.	664
Rockwood Sprinkler Co.	665
Russell Uniform Co.	727
Safa Alarm Div., Fyr-Fyter Co.	669
Scott Aviation Corp.	709
Seagrave Corp.	654
Sharpsville Steel Fabricators	712
Smith & Co., D. B.	717
Stephenson Corp.	706
Sterling Siren Fire Alarm Co., Inc.	721
Super-Vacuum Mfg. Co.	725
Unox Co., Div. McFarland Mfg. Corp.	723
W-B Manufacturing Co.	703
Waukesha Motor Co.	671